(19,765.)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1905.

No. 264.

LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, JR., ET AL., PETITIONERS,

vs.

UNITED STATES MINING COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

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a *Transcript of Record.*

United States Circuit Court of Appeals, Eighth Circuit.

No. 1927.

UNITED STATES MINING COMPANY, a Corporation, Appellant,
vs.
LEONIDAS M. LAWSON ET AL., Appellees.

Appeal from the Circuit Court of the United States for the District of Utah.

Filed May 25, 1903.

1 UNITED STATES OF AMERICA, *District of Utah, ss:*

At a regular stated term of the United States Circuit Court for the District of Utah, begun and held at the building used as a United States Court House in the City of Salt Lake, in said District, on the first Monday (being the 2nd day) of December, A. D. 1901, and the 125th of the Independence of the United States.

Present: Honorable John A. Marshall, District Judge for the District of Utah.

No. 467.

UNITED STATES MINING COMPANY, a Corporation, Plaintiff,
vs.
LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, Jr., HEBER M. WELLS, ENOS A. WALL, THOMAS KEARNS and JUNIUS F. WELLS and IVANHOE MINING COMPANY, a Corporation, Defendants.

Transcript of Record.

On the 2nd day of June, 1902, plaintiff filed its amended bill of complaint herein, which, being entitled in said Court and cause, is in words and figures following to-wit:

Amended Complaint.

To the Honorable Judges of the Circuit Court of the United States, Eighth Circuit, District of Utah:

The United States Mining Company, a corporation organized under the laws of the State of Maine, and a citizen within the State of Maine, by leave of the Court, brings this its Amended Bill against the defendants above named, Leonidas M. Lawson, William J. Harvey, citizens and residents within the State of New York, Edward Balbach, jr, a citizen and resident within the State of New Jersey, Heber M. Wells, Enos A. Wall, Thomas Kearns and Junius F.

Wells, citizens and residents within the state of Utah, and for cause of complaint against said defendants, your orator complains and alleges:

2

1

That your orator is now and at all the times herein mentioned was a corporation duly organized and existing under and by virtue of the laws of the State of Maine, having its principal place of business and its office within the said State of Maine, and that it is and was at all of the times herein mentioned a citizen of the United States and a citizen and resident of and within said State of Maine.

That during said times your orator has been and still is engaged in the business of owning and operating mines in the State of Utah; and its principal place of business in said State is in the County of Salt Lake; that before doing business in said State it complied with the laws thereof by filing a certified copy of its articles, agreement and certificate of incorporation and by-laws with the Secretary of State of Utah, and with the County Clerk of the County of Salt Lake in said State; that by resolutions of its Board of Directors it accepted the provisions of the Constitution of said State and designated a person residing in Salt Lake City in the County of Salt Lake upon whom process issued by authority of or under the laws of the State might be served, and filed a copy of said resolutions certified by its President and Secretary in the office of the Secretary of State of Utah and also a copy so certified in the office of the County Clerk of said County of Salt Lake.

2

That at all the times herein mentioned the defendants above named Leonidas M. Lawson and William J. Harvey, were and now are respectively citizens of the United States, and citizens of and residents within the State of New York.

3.

That at all the times mentioned herein the defendant above named Edward Balbach, jr., was and now is a citizen of the United States and a citizen of and resident within the State of New Jersey.

4

That at all the times mentioned herein the defendants above named, Heber M. Wells, Enos A. Wall, Thomas Kearns and Junius F. Wells, were and now are respectively citizens of the United States, and citizens of and residents within the State of Utah.

5

Your orator further respectfully represents and shows that for more than than one year last past it has been and now is the
3 owner and in possession and entitled to the possession of those certain lodes and mining claims situate, lying and being in the West Mountain Mining District, Salt Lake County, State of Utah, known as and called the "Jordan Extension" Lode Mining

Claim, the "Northern Light" Lode Mining Claim, the "Grizzly" Lode Mining Claim, and the "Fairview" Lode Mining Claim.

The "Jordan Extension" Lode Mining Claim is known as U. S. Lot No. 423, and with magnetic variation of 17° East more particularly described as follows, to-wit:

Commencing at Post No. 1 a corner of the claim, from which U. S. Mineral Monument No. 1 bears South 16° 44′ East, 552.7 feet distant; and thence running North 12° 30′ west 200 feet to corner No. 2; thence South 77° 30′ West 400.49 feet to corner No. 3; thence South 44° 27′ West 534.83 feet to corner No. 4; thence south 12° 30′ east 238.6 feet to corner No. 5; thence north 44° 27′ East 605.62 feet to corner No. 6; thence north 77° 30′ east 341.15 feet to said corner No. 1, the place of beginning. Expressly excepting and excluding, however, from the surface area lastly described so much thereof as is embraced in and as constitutes part of the Kempton Lode Mining Claim, Lot No. 55; and the Ashland Lode Mining Claim, Lot No. 64, which conflict areas do not constitute part of said Jordan Extension Claim.

The "Northern Light" Lode Mining Claim is known as United States Mineral Lot No. 53, in said District, and is more particularly described as follows: Beginning at Post and Corner No. 1, as set and described in the Official Survey, and thence running North 65° West 200 feet to corner and Post No. 2; thence North 25° East 1200 feet to post No. 3; thence South 65° East 200 feet to post No. 4; thence South 25° West 1200 feet to post No. 1 the place of beginning. From Post No. 4 U. S. Mineral Monument No. 1 of said District bears South 32° 39′ East and 1242 feet distant.

The "Grizzly" Lode Mining Claim is known as U. S. Lot No. 52 and is described as follows:

Beginning at post and corner No. 1 as set and described in the Official Survey, and from which U. S. Mineral Monument No. 1 of said District bears North 80° and 55′ East and 1714.5 feet distant, and running thence North 36° West 200 feet to post and corner No. 2, thence North 54° East 1600 feet to post No. 3; thence South 36° East 200 feet to post No. 4; thence South 54° West 1600 feet to post No. 1 the place of beginning.

4 The "Fairview" Lode Mining Claim is known as U. S. Lot 54 in said District, and is described as follows:

Beginning at Post and Corner No. 1 from which U. S. Mineral Monument No. 1 of said District bears South 82° and 45′ East 1425.5 feet distant, and running thence North 36° West, 119 feet to post and corner No. 2; thence North 54° East 377 feet to post and corner No. 3; thence North 25° East 371 feet to post and corner No. 4; thence South 65° East 108 feet to post and corner No. 5; thence South 25° West 425 feet to post No. 6; and thence South 54 degrees West, 380 feet to corner and post No. 1, the place of beginning.

6

Your orator further represents and shows that in and beneath the surface boundaries of said "Jordan Extension" Lode Mining Claim, "Northern Light" Lode Mining Claim, "Grizzly" Lode Min-

ing Claim, and Fairview Lode Mining Claim, extended downward vertically, there is a vein or lode, or veins or lodes, of mineral bearing rock in places carrying gold, silver, copper, lead and other valuable minerals, which said veins and lodes and all the minerals therein contained are the property of your orator.

That said mining claims are valuable only for the ores and minerals contained therein beneath the surface boundaries thereof extended downward vertically and with the ores and minerals removed therefrom said premises are wholly valueless. That said four mining claims are adjacent and contiguous to each other and to other mining claims, all of which are owned, occupied and worked by your orator as a group of claims forming one property for mining purposes.

Your orator further alleges that ores and minerals in the said premises embraced within the surface boundaries of said four mining claims described as aforesaid, and excluding the excepted areas, and which the defendants threaten to take and remove are of great value, to-wit, of the value of more than $10,000.00 and the amount and value of the matter in controversy exceeds the sum of $2000.00, exclusive of interest and costs.

7

That said defendants, and each of them, assert and claim an interest in said premises and the ores and minerals therein contained adverse to your orator, and assert and give out in speech and otherwise that they are the owners of said ores and minerals contained in said premises beneath the surface of said four mining claims, and have the right to enter and mine and remove the same. That the alleged claims and assertions of said defendants and each of them are false and untrue and unfounded in fact, and are a cloud upon the title and possession of your orator to said above described premises. That within two years last past said defendants in assertion of their alleged claims and interest in and to the ores and minerals contained in said premises beneath the surface thereof have, from time to time wrongfully and unlawfully by means of secret underground works, drifts, excavations and openings, commencing at a long distance on the surface from said mining claims, and to which your orator has no access, without the knowledge or consent of your orator, entered in and upon the said "Jordan Extension" Mining Claim, the "Northern Light" Mining Claim, and the "Grizzly" Mining Claim and beneath the surface thereof, and have mined, extracted and removed and converted to their use, large quantities of valuable ores and minerals therein contained, the property of your orator.

8

Your orator further represents and shows that said defendants and each of them in the assertion of their said alleged claims, of ownership to said premises, and the ores and minerals therein contained, give out in speech and threaten to continue their said wrongful and unlawful claims, and to continue their said wrongful and

unlawful invasion of the said premises of your orator, and to continue to mine, extract and remove to the great and irreparable injury and damage of your orator, the ores and minerals contained in said premises vertically beneath the surface boundaries thereof, and unless enjoined and restrained by the order of this Honorable Court, said defendants and each of them will continue their said unlawful and wrongful acts, and will continue to mine, extract and remove from said premises vertically beneath the surface thereof the ores and minerals therein contained the property of your orator, to the great and irreparable damage and injury of your orator, and to the waste and destruction of said premises.

9

And your orator avers and shows that the defendants are in possession of and are working a certain mining claim adjoining the said four mining claims of your orator, and situated in the West Mountain Mining District, Salt Lake County, Utah, known as the Kempton Mining Claim U. S. Lot 55 and which was located in the year 1871, and on information and belief your orator avers that the defendants allege and pretend that the mineral vein deposits and ores under and beneath the surface of the said Jordan Ex-
6 tension Mining Claim Lot 423, the Northern Light Mining Claim Lot 53, the Grizzly Mining Claim Lot 52, and the Fairview Mining Claim Lot 54, are in and part of a mineral vein and lode in and belonging to the said Kempton Mining Claim and on a lateral dip of an alleged vein in said Kempton Mining Claim and having its apex therein, and pretend that they, the said defendants have the right as the owners or occupants of said Kempton Mining Claim to enter and extract ores from beneath the surface of the said four mining claims of your orator; whereas your orator on information and belief charges the contrary to be the truth and alleges:

For more than two years last past it has been and still is the owner and in possession of two certain mining claims situated in the West Mountain Mining District, Salt Lake County, State of Utah, to-wit:

The "Jordan Silver Mining Company's Mine" so called in the U. S. patent but usually known as the "Old Jordan" being Lot No. 64 of the Surveyor General's Office and Mineral Entry No. 248 in the United States Land Office in Salt Lake City, Utah, and described as follows, with magnetic variation 17° East: Beginning at Post No. 1 at the Southeasterly corner of the claim, from which United States Mineral Monument No. 1 bears South 68° 23′ West 771 feet distant, thence North 12° 30′ West 100 feet to the discovery point, and 200 feet to post No. 2; thence south 77° 30′ west 5200 feet to post No. 3 from which U. S. Mineral Monument No. 5 bears North 47° 19′ east 152 feet distant; thence South 12° 30′ east 200 feet to post No. 4, thence, North 77° 30′ east 5200 feet to post No. 1, the place of beginning, and including 5200 feet of the Old Jordan Lode, but excepting from the surface ground described an area in conflict with the Kempton Mining Claim;

Also the Mountain Gem Lode and Mining Claim, situated in said

Mining District located August 20th, 1864, being Lot No. 475 and Mineral Survey No. 439 in the Surveyor General's office at Salt Lake City, Utah, and described as follows:

Beginning at post and corner No. 1 and running thence North 25° 37′ West 200 feet to post No. 2; thence north 64° 23′ East 470.35 feet to post No. 3 from which U. S. mineral Monument No. 1 bears South 83° 44′ East 714 feet distant; thence South 25° 37′ East 200 feet to post No. 4; thence South 64° 23′ 470.35 feet to corner No. 1 the place of beginning, but excepting a portion of the surface ground included in the Old Jordan Mining Claim.

That the said Old Jordan Mining Claim and the Mountain Gem Mining Claim each contains a lode of rock in place bear-
7 ing silver and other metals and that the Old Jordan lode enters its surface ground across the North Easterly end line thereof and on its strike and course and at its apex runs southwesterly in the claim and between and nearly parallel to the side lines thereof and within ground belonging to and not excepted therefrom for a distance of over 1550 feet. That the Mountain Gem lode and vein enters across the North Easterly line of the Mountain Gem Mining claim and continues on its course and at its apex south westerly and between and nearly parallel to the side lines, and in ground not excepted from the claim, throughout the length of said Mountain Gem Mining claim. That the dip of said lodes in each of said mining claims is northwesterly and at depth to or toward the Kempton Mining Claims occupied by the defendants.

That said Old Jordan lode was located by qualified locators on the 17th day of December, 1863, and in accordance with the laws and customs of miners, and by said locators and their successors and grantees, held, worked and improved in accordance with said laws and mining customs, and under said location and upon said compliance with laws and customs, application for a United States patent was made and granted, the entry in the Land Office being on the 8th day of June, 1877, and the patent issued July 14th, 1877, and by said grant to a grantee to whose title the complainant has succeeded, there was granted 5200 feet of the said Jordan Lode and surface ground as above described.

That the said Mountain Gem Lode was located on the 20th day of August, 1864, and held and improved by the locators and their grantees and successors in accordance with mining laws and customs and a United States patent therefor granted on said location and such subsequent compliance with laws and customs thereunder, to a grantee to whose title and rights the complainant has succeeded.

And your orator further shows and alleges on its information and belief that if there is any mineral vein or lode in the Kempton Mining Claim, dipping or in anywise extending to or under the Jordan Extension Mining Claim, the Northern Light Mining Claim, the Grizzly Mining Claim, and the Fairview Mining Claim, or either of them, that such lode or vein does not have an apex in the Kempton Mining Claim or belong thereto, or in anywise form a part thereof, but that the same is a part of and belongs to the Old Jordan and Mountain Gem lodes above described, the property of the com-

plainant, which lodes in their dip and between protractions in their own direction of the parallel surface end lines of said claims pass across and beneath their side lines, and extending beneath
8 the surface and across the Kempton Mining claim enter into and beneath the surface of the Jordan Extension Mining claim, and that the ores found beneath the last named claim in said lodes are the same the defendants wrongfully pretend are in or belong to a lode or lodes in the Kempton Mining claim, and not otherwise.

In consideration whereof, and forasmuch as your orator has no sufficient remedy at law for the wrongs done and threatened to be done, and that the remedy at law is inadequate and can afford no protection to your orator against the wrongful and unlawful claims and assertions of said defendants, and the trespass and waste threatened to be done, for the reasons hereinbefore stated, and is only relievable in a Court of Equity where matters of this kind are properly cognizable and reviewable.

Your orator to the end that it may obtain the relief to which it is justly entitled in the premises:

I.

Prays the Court to grant to it your writ of subpœna directed to the said Leonidas M. Lawson, William J. Harvey, Edward Balbach, Jr., Heber M. Wells, Enos A. Wall, Thomas Kearns and Junius F. Wells, the defendants hereinbefore named, requiring and commanding them and each of them, to appear herein and show if they can, why your orator should not have the relief prayed, and make a full disclosure and discovery of all the matters aforesaid, and according to the best and utmost of their remembrance, knowledge, information, and belief, full, true, direct and perfect answer make to the matters hereinbefore stated and charged, but not under oath, an answer under oath being expressly waived.

II.

That they and each of them be required to set forth any and every adverse interest, claim or demand in or to said above described premises and the ores and minerals therein contained, to the end that the same may be justly adjudicated, and declared null and void as against your orator, and that the title and ownership of your orator in and to said Jordan Extension Mining Claim, the Northern Light Mining Claim, the Grizzly Mining Claim, and the Fairview Mining Claim and the ores and minerals contained therein vertically beneath the surface boundaries thereof, be established and confirmed as against any and all claims of the said defendants, or either or any of them, and all cloud thereon forever removed.

9 III.

That your Honors grant unto your orator your writ of injunction, commanding the said defendants and each of them, their servants,

agents and employees and all persons under their authority, direction or control, to absolutely desist and refrain from entering into or upon any portion of the said Jordan Extension Lode Mining Claim, the Northern Light Mining Claim, the Grizzly Mining Claim, and the Fairview Mining Claim, or either of them, and from working in or upon said premises or beneath the surface thereof, or taking any ores or minerals therefrom at any point upon or beneath the surface of said premises extended downward vertically, until such time as your Honors shall direct and appoint a hearing herein.

IV.

That said defendants and each of them, be retained from the commission of any of the acts or doings hereby sought to be enjoined pending such hearing and upon such hearing that they and each of them be forever enjoined and restrained from asserting any claim whatsoever in and to said premises, and the ores and minerals therein contained, and from working in or upon or beneath the surface of said Jordan Extension Mining Claim, the Northern Light Mining Claim, the Grizzly Mining Claim and the Fairview Mining Claim, or either of them, or doing any act or thing adverse to the title and ownership of your orator in and to said premises and the ores and minerals therein contained, and for such other and further relief as the equity of the case may require, and to your Honors may seem meet, and for its costs of suit in this behalf most wrongfully expended.

BENNETT, SUTHERLAND,
VAN COTT & ALLISON,
Solicitors for Complainant.

R. HARKNESS, *Counsel.*

UNITED STATES OF AMERICA,
District of Utah, County of Salt Lake, ss:

A. F. Holden being first duly sworn deposes and says that he is an officer of the plaintiff above named, United States Mining Company, to wit: Managing Director thereof; that he has read the above and foregoing Amended Bill of Complaint and knows the contents thereof; that the same is true of his own knowledge, except as to the matters therein stated upon information or belief, and as to those matters he believes it to be true.

A. F. HOLDEN.

Subscribed and sworn to before me this 2nd day of June, A. D. 1902.

[SEAL.]

R. B. HARKNESS,
Notary Public.

Copy rec'd June 2nd, 1902.—Solicitors for defendants.

Amended Bill of Complaint filed June 2, 1902. Jerrold R. Letcher, Clerk.

And afterwards and on the 10th day of June, 1902, said defendants filed their demurrer to said amended bill of complaint, which, being entitled in said court and cause, is in words and figures following, to-wit:

Demurrer to Amended Complaint.

To the Honorable the Judges of the United States Circuit Court, for the Eighth Circuit and District of Utah:

The joint demurrer of Leonidas M. Lawson, William J. Hervey, Edward Balbach, Jr., Herbert M. Wells, Enos A. Wall, Thomas Kearns, and Junius F. Wells, defendants above named, to the Bill of Complaint of the United States Mining Company, a corporation, the plaintiff above named:

These defendants respectively by protestation, not confessing or acknowledging all or any of the matters and things in the said plaintiff's bill to be true, in such manner and form as the same are therein set forth and alleged:

I.

That the said Bill is deficient in certainty in this, that it cannot be determined therefrom, whether the defendants are trespassing upon a lode which has its apex in the alleged Old Jordan Claim or in the Mountain Gem Claim, or which has its apex in both those claims.

II.

That the said bill is multifarious in that there is united therein, different subjects matter, namely, an alleged trespass on a lode which has its apex in Old Jordan or Mountain Gem ground, but which in its descent into the earth dips underneath the surface of the alleged Jordan Extension Mining Claim, the Northern Light Claim, the Grizzly Claim, and the Fairview Claim, thus uniting an
11 action for alleged trespasses on said lode with alleged trespasses in the ground under the surface of said alleged latter mining claims, which claims are alleged to have no veins or lodes existing therein except the lode which is alleged to have its apex in, and which dips from the Old Jordan or Mountain Gem claims, and for the same reasons there is a misjoinder in said bill of said several distinct and independent matters.

III.

That it appears upon the face of the bill that the plaintiff has an adequate remedy at law.

IV.

That the said plaintiff has not in or by its said bill made or stated such a cause as doth or ought to entitle it to any such discovery or relief as is thereby sought or prayed for, from or against these defendants, or either of them, for that it does not thereby appear that there was or is, any impediment to an action at law being brought

by the said plaintiff to try its alleged title to the vein or lode of mineral bearing rock in place carrying gold, silver, copper, lead and other valuable minerals alleged to be in "Jordan Extension Lode Mining Claim," and the said Northern Light, Grizzly and Fairview Claims, described in the bill and on which it is alleged defendants have trespassed and are now trespassing, or that in any trial or action at law, any verdict or judgment has been hitherto obtained by plaintiff for that purpose; or that there was previously to, or at the time the said bill was filed any authentic record of such right, nor is it alleged in said bill that any action at law is now pending for the determination of such right, nor that the said bill is brought in aid of such action at law; nor does it thereby appear or from the allegations thereof, that there was or is any impediment to an action at law being brought by the said plaintiff to try its alleged title to the alleged veins or lodes of rock in place bearing silver and other metals in said Old Jordan Mining Claim or said Mountain Gem Mining Claim, or of either of the alleged veins or lodes in either of them described in the said bill, which is or are alleged to dip through and under said Kempton Mine to and underneath said Jordan Extension Mining Claim surface ground, and Northern Light, Grizzly and Fairview Claims, and on which it is alleged defendants have trespassed and are now trespassing, or that in any trial or action at law any verdict or judgment has been hitherto obtained by plaintiff for that purpose, or that there was existing previously to or at the time said bill was filed any authentic record of
12 such right, nor is it alleged in said bill that any action at law is now pending for the determination of such right, nor that said bill is brought in aid of such action at law.

V.

That said bill doth not state facts sufficient to constitute a cause of action against these defendants, or either of them, or to entitle the plaintiff to any relief within the equity jurisdiction of this Honorable Court.

VI.

Wherefore, and for divers other good causes of demurrer appearing in said Bill, these defendants doth demur thereto and humbly demand the judgment of this Honorable Court whether they shall be compelled to make any further or other answer to the said bill, and pray to be hence dismissed with their costs in this behalf most wrongfully sustained.

OGDEN HILES,
Solicitor for Defendants.

DISTRICT AND STATE OF UTAH, *County of Salt Lake, ss:*

I, Enos W. Wall, make solemn oath and say that I am one of the above named defendants in the foregoing demurrer, and that the same is not interposed for delay, and that it is true in point of fact.

ENOS W. WALL.

Subscribed and sworn to before me this 10th day of June, A. D. 1902.

[SEAL.] JOSIAH THOMAS,
Notary Public.

I hereby certify that, in my opinion, the foregoing demurrer is well founded in point of law.

OGDEN HILES,
Of Counsel.

Received copy of the foregoing demurrer this 10th day of June, 1902.

BENNETT, SUTHERLAND,
VAN COTT & ALLISON,
Solicitors for Plaintiff.

Filed June 10, 1902. Jerrold R. Letcher, Clerk.

And afterwards and on the 14th day of July, 1902, an order was made and entered overruling said demurrer and that a tem-
13 porary injunction issue, which being entitled in said Court and Cause, is in words and figures following, to-wit:

Order in Re Demurrer & Injunction.

This cause having been heretofore and on the 7th day of July, 1902, submitted on defendants' demurrer to plaintiff's amended bill of complaint, and also on plaintiff's motion for a provisional injunction and restraining order, and by the Court taken under advisement, and the Court having duly considered the same being fully advised in the premises, it is Ordered that said demurrer be and the same is hereby overruled. And it is further Ordered that a temporary injunction issue against said defendants upon said plaintiff giving a bond in the sum of $12,000.

And afterwards, and on the 14th day of July, 1902, an opinion of the Court was made and filed, by which the demurrer to the amended complaint was overruled which, being entitled in said court and cause, is in words and figures following, to-wit:

Opinion on Demurrer.

MARSHALL, *J.*:

In this case, the original bill, sought to quiet the plaintiff's title to certain mining claims and to obtain an injunction to restrain trespasses thereon, but failed to allege that the plaintiff was in possession of the mining claims in question for this reason the demurrer interposed by the defendants was sustained. An amended bill has been filed which only differs materially from the original bill in

alleging that the plaintiff was and had for a considerable period of time been in the possession of the disputed premises. A demurrer has been interposed to this amended bill. The plaintiff, on its bill and on affidavits supporting it, moves for a temporary injunction, and the defendants rely on their demurrer in opposition thereto.

The first and second grounds of demurrer were overruled when interposed to the original bill, and there seems to be no change in the amended bill that requires a different decision.

The remaining grounds of demurrer, are,

1. That the plaintiff has an adequate remedy at law.

2. That the plaintiff fails to allege that the plaintiff's title has been established at law, and hence, its title should not be quieted nor the destruction of the property prevented by an injunction unless in aid of an action at law to determine the title.

14 1. The demurrer for the purposes of this hearing admits the facts well pleaded in the amended bill. The plaintiff is alleged to be in the possession of the premises in question. It then has no remedy in ejectment. In an action for trespass, the title would probably be drawn incidentally in question, but the right determined would be limited to the place trespassed on, and, indeed, the record would not show that the title was determined. In a case of this kind, the remedy afforded in an action of trespass is not so adequate as that to be obtained in an equitable suit to quiet the title.

Mining Co. *v.* Mining Co., 5 Utah, 3.

Ayres *v.* Bensley, 32 Cal., 620.

2. It does not appear that the plaintiff's title has ever been established at law. The Utah statute provides,

"An action may be brought by any person against another who "claims an estate or interest in real property adverse to him for the "purpose of determinling such adverse claim."

As pointed out in Wehrman *vs.* Conklin, 155 U. S., 314-323, this statute enlarges the ancient jurisdiction of courts of equity in several particulars. It dispenses with the necessity of plaintiff's title having previously been established at law; and as stated in Holland *vs.* Challen, 110 U. S. 15, 21, there is no good reason why this enlarged right "should not be enforced by the Federal Courts when the controversy to which it may give rise is between citizens of different states."

This does not violate the inhibition of the Constitution with respect to trial by jury in cases at common law, because the plaintiff, being in possession, the suit to determine the title was always of equitable cognizance. The condition of a prior determination at law of the legal title, was imposed by courts of equity for prudential reasons, and may be dispensed with by the legislature.

In Holland *vs.* Challen, *supra,* it is said at page 24:

"The truth is that the jurisdiction to relieve the holders of real "property from vexatious claims to it, casting a cloud upon their "title and thus disturbing them in its peaceable use and enjoyment, "is inherent in a court of equity, and though conditions to its exer-"cise have at different times been prescribed by that court, both in

"England and in this country, they may at any time be changed or "dispensed with by the legislature without impairing the general "authority of the Court. Pomeroy's Equity Jurisprudence, Sec. "1398. The equitable rights of parties in Nebraska, claiming the
" legal right to real property, are simply enlarged by its
15 " statute, not changed in character. And the language used
" by this Court, speaking by Mr. Justice Bradley, in the Brod-"erick Will case, 21 Wall. 520, is appropriate here. 'Whilst it is "true that alterations in the jurisdiction of State courts cannot affect "the equitable jurisdiction of Circuit Courts of the United States, "so long as the equitable rights themselves remain, yet an enlarge-"ment of equitable rights may be administered by the Circuit Courts "as well as by the courts of the State.' And it may be affirmed of "this case what was said as probably true of that one, that it is 'a "case in which an enlargement of equitable rights is effected, al-"though presented in the form of a remedial proceeding.' 'Indeed,' "as the court here observed, 'much of the equitable jurisdiction con-"sists of better and more effective remedies for attaining the rights "of parties.'"

Nor is it a valid objection in this case to the granting of an injunction that the plaintiff's title had not been established at law. Ordinarily a court of equity will not restrain the violation of a common law right until the determination of that right at law, except in aid of an action at law to determine it. This rule is not one of jurisdiction but of expediency and policy.

Waterloo Min. Co. *vs.* Doe, 82 F., 45, 48.

It was considered unwise that a court of equity should make its jurisdiction to restrain a continuous or destructive trespass an occasion for drawing to itself a determination of legal titles.

In Stevens *v.* Williams, 5 Morrison Min. Reports, 449, 452, it was "contended that having a jurisdiction to restrain the trespass, the court may proceed to the investigation of all other questions concerning the estate."

The Court says:

"But it is plain that the jurisdiction to restrain trespasses, like "that to restrain nuisances, is not an original jurisdiction of the "Court of equity, which enables this court, under the semblance of "preventing irreparable injury to real estate, to take a jurisdiction "of deciding conclusively upon the legal title itself: Irwin *v.* Devid-"son, 3 Iredells Eq. 311. In the case stated in the pleadings, "there is nothing like a ground of jurisdiction in respect to the title "to the estate. All the matters set up affecting that title are of legal "cognizance, in which the parties have a constitutional right to "trial by jury: Hipp *v.* Babin, 19 How. 271; Lewis *v.* Cocks, 23 "Wall. 466. To draw the question of title into this Court upon a "merely collateral matter, such as the preservation of the property
" pending the litigation, would be an usurpation of authority.
16 " If there were any equitable circumstance affecting the title
" itself, upon which the jurisdiction of the court could rest, "the principal invoked would apply. But here we can only sup-

"plement the law by preserving the property until the controversy "shall be ended. * * * Another rule to be observed in this class "of cases, then, is that unless there be some special ground for relief "in equity the title to the estate must be settled at law, and a court "of equity will not enter on that question."

In the case at bar there is special ground for relief in equity independent of the injunction sought. The jurisdiction of a court of equity to quiet plaintiff's title is rightfully invoked. Whether the injunction is or is not granted, the court is required to determine this disputed title. The jurisdiction with respect to the injunction is not made the means of drawing to the court the controversy as to the title. No rule of expediency or of policy is then violated by the issuance of the injunction. In this class of cases it seems always to have been assumed that if the court of equity had jurisdiction independent of the injunction to determine the legal title, then there was no necessity for a prior determination of it at law to justify the issuance of an injunction.

Davidson *vs.* Calkins, 92 F 230, 232.

The demurrer will be overruled and a temporary injunction will issue upon the giving of a bond in such an amount as may be fixed by the Court upon a hearing of the parties.

Indorsed: Filed July 14, 1902. Jerrold R. Letcher, Clerk.

And afterwards, and on the 26th day of July, 1902, said defendants filed their answer to the amended bill of complaint herein, which, being entitled in said court and cause, is in words and figures following, to-wit:

Answer to Amended Complaint.

The answer of the above named defendants Leonidas M. Lawson, William J. Harvey, Edward Balbach, Junior, Heber M. Wells, Enos A. Wall, Thomas Kearns, and Junius F. Wells, to the amended bill of complaint of the above named complainant.

In answer to said amended bill the said defendants say as follows:

First. They admit the diverse citizenship of the parties plaintiff and defendants as the same is alleged in said amended bill, and that the amount in controversy in this suit exceeds the sum of two thousand ($2,000) dollars, exclusive of costs.

17 Second. That as to whether the said plaintiff before doing business in the State if Utah, complied with the laws thereof, by filing a certified copy of its articles of agreement or certificate of incorporation or by-laws with the Secretary of State, or with the County Clerk of Salt Lake County, in said State, or otherwise complied with the laws of said State as alleged in the first paragraph of said amended bill, these defendants or either of them have not sufficient knowledge or information on which to base a belief, and therefore, on that ground they deny the same.

Third. That as to whether the said plaintiff for more than two years last past, or for any time has been or is now the owner of the alleged lode mining claim called the "Jordan Extension" mining claim, or the "Northern Light" lode mining claim, or the "Grizzly" lode mining claim, or the "Fairview" lode mining claim as alleged in the fifth paragraph of said amended bill, or otherwise, these defendants or either of them have not sufficient knowledge or information on which to base a belief, and therefore on that ground they deny the same.

Fourth. And these defendants further answering the said bill, deny that in or beneath the surface boundaries of said alleged Jordan extension lode mining claim, or in the said Northern Light claim, or Grizzly claim, or Fairview claim, or under either of them extended downward vertically or otherwise or at all, there is any vein or lode of mineral bearing rock in place carrying gold or silver, or copper or lead, or other valuable or any minerals or metals, or that said vein or lode or any vein or lode therein, or the minerals therein contained, is or are the property of plaintiff, but to the contrary thereof, these defendants aver that if any vein or lode exists or is found beneath the surface boundaries of said alleged Jordan Extension lode mining claim, or alleged Northern Light claim, or said alleged Grizzly claim, or said alleged Fairview claim, the same is a vein or lode having its top or apex within the surface boundary lines of the patented Kempton lode mining claim, United States Lot No. 55, mentioned in said amended bill, the property of these defendants, they being the owners of said lode throughout its entire depth, together with all the minerals and meals therein contained, as is in this answer hereinafter more fully and specifically averred and set out.

And these defendants further deny that the said alleged Jordan Extension lode mining claim is valuable only or at all for the ores or minerals contained therein beneath the surface boundaries extended downward vertically or otherwise, or that said North-
18 ern Light, or Grizzly, or Fairview alleged mining claims are valuable, or either of them is valuable only or otherwise, for the ores or minerals contained therein beneath the surface thereof extended downward vertically or otherwise, or that either of them, has or contains any discovered vein or lode whatever of mineral or metaliferous ores, earth or rock whatever, except the vein or lode belonging to these defendants which has its apex in Kempton ground as hereinafter averred and set out.

And these defendants further deny that any ores or minerals in said four alleged mining claims of plaintiff, or in either of them embraced within the surface boundaries thereof, excluding excepted areas, or otherwise, which defendants threaten to take or remove, are of great or any value, or of the value of more than $10,000, or the value of any sum of money whatsoever.

Fifth. These defendants deny that they or either of them assert or claim an interest in said premises, or in the ores or minerals therein contained adverse to the plaintiff, or otherwise, or that they or either of them assert or give out in speech or otherwise, that they

are the owners of said ores or minerals therein contained in said premises beneath the surface or otherwise, or that there are any ores or minerals beneath the surface thereof belonging to the plaintiff, and defendants deny, that the alleged claims or assertions, or any claims or assertions of defendants or either of them, are false or untrue or unfounded in fact, or are a cloud on the, or any title of plaintiff in the said described premises.

And these defendants deny further that within the two years last past, or at any time, these defendants or either of them, in assertion of their alleged claims or interest in or to the ores or minerals contained in said premises beneath the surface thereof, or otherwise, or at all, have wrongfully or unlawfully, by means of secret underground works, or drifts, or excavations, or by other means, or without the knowledge or consent of plaintiff or otherwise, or at all, entered into or upon the said Jordan Extension mining claim, or the Northern Light mining claim, or the Grizzly mining claim, or the Fairview mining claim, or beneath the surface thereof, or have mined, extracted or removed large or any quantities of valuable or other ores or minerals therein contained, the property of plaintiff.

Sixth. And these defendants further answering the said amended bill of complaint, deny that defendants or either of them in the assertion of their said alleged claims of ownership to said premises or the ores or minerals therein contained, or otherwise, or at all,
19 give out in speech, or threaten to continue their said, or any wrongful or unlawful claims, or any claims to said premises, or to continue their said wrongful or unlawful invasion of said premises of plaintiff, or that they or either of them ever did assert or claim any title whatever to said alleged Jordan Extension lode mining claim, or said alleged Northern Light lode mining claim, or said alleged Grizzly lode mining claim, or said alleged Fairview mining claim, or any part thereof, or of any lode or vein therein contained having its top or apex within or beneath the surface boundaries thereof, or that they or either of them ever in any manner invaded the same, or that they threaten to continue, or that they ever did mine or extract or remove, to the great or irreparable injury or damage of plaintiff, or otherwise, or at all, any ores or minerals contained in said premises vertically beneath the surface boundaries thereof, or that they or either of them will, unless enjoined or restrained by the order of this Honorable Court, or otherwise, continue their said or any unlawful or wrongful acts, or will continue to mine or extract or remove from said premises vertically beneath the surface thereof or otherwise, any of the ores or minerals therein contained, the property of plaintiff, to its great or irreparable damage or injury, or to its damage or injury, at all, or to the destruction or other injury of said premises.

Seventh. And these defendants further answering the said amended bill of complaint, admit that they are in possession of and are working a certain mining claim adjoining the alleged Jordan Extension mining claim, the Northern Light Mining claim, the Grizzly mining claim, and the Fairview mining claim, situated in the West Mountain Mining District, Salt Lake Cunty, State of Utah,

known as the Kempton Mining Claim, U. S. Lot No. 55, and which was located in the year A. D. 1871, but these defendants deny that they or either of them allege or pretend that the mineral vein deposits or ores under and beneath the surface of the said Jordan Extension Mining Claim, Lot 423, or the Northern Light mining claim, Lot 53, or the Grizzly mining claim Lot 52, or the Fairview Mining claim, Lot 54, are in or part of a mineral vein or lode belonging to the said Kempton Mining Claim, or having its apex therein, or pretend that they, the said defendants have the right, as the owners or occupants of said mining claim, to enter or extract ores from beneath the surface of the Jordan Extension, Lot 423, or the Northern Light, Lot 53, or the Grizzly, Lot 52, or the Fairview, Lot 54, but to the contrary thereof, these defendants aver, that the fact is, that some of them are the owners seized in fee and with their other co-defendants herein who are lessees thereof for years, are in the peaceable occupation and possession and entitled to the possession of the said Kempton Mine and mining claim, on and embracing the Neptune Lode, lying and being situate in said Mining District, County and State, particularly described as follows, to-wit:

Beginning at Corner No. one (1) marked "U. S. 55 No. 1", thence south fourteen (14) degrees thirty (30) minutes West sixty (60) feet to a post at the intersection of southerly boundary of Survey No. 53, made for the claim of George Hardie upon the Northern Light Mining Claim; two hundred (200) feet to Corner post No. 2, marked "U. S. 55 No. 2", thence south seventy-five (75) degrees thirty (30) minutes east two hundred and eighty-five (285) feet to Corner Post No. 3, marked "U. S. 55 No. 3", thence North seventy one (71) degrees thirty (30) minutes East one hundred and ninety five (195) feet to Corner Post No. 4, marked "U. S. 55 No. 4", thence north fifty one (51) degrees thirty (30) minutes East five hundred and eighty four (584) feet to Corner Post No. 5, marked "U. S. 55 No. 5", thence North fourteen (14) degrees thirty (30) minutes East three hundred and thirty six (336) feet to Corner Post No. 6, marked "U. S. 55 No. 6", thence South fifty one (51) degrees thirty (30) minutes West eight hundred and fourteen (814) feet to Corner Post No. 7, marked "U. S. 55 No. 7", thence south seventy one (71) degrees thirty (30) minutes west one hundred (100) feet to corner Post No. 8, marked "U. S. 55 No. 8", thence North seventy five (75) degrees thirty (30) minutes West sixty seven (67) feet to a post at point of intersection with easterly boundary of said survey No. 53, thence two hundred and twenty two (222) feet to the place of beginning, containing four and eighty eight hundredths (4-88/100) acres of land, more or less, patent therefor having been granted by the Government off the United States on or about the 23rd day of February, A. D. 1875 to the grantors and predecessors in interest of these defendants, together with all the mineral therein, and all metaliferous lodes and veins embraced therein, the tops or apices of which lie inside of said surface boundaries and lines extended downward vertically, although such veins and lodes so far depart from a perpendicular in their course downward as to extend

outside the vertical side lines of said claim and location, and including therein the said Neptune Lode and vein which has its top and apex within said surface boundaries in Kempton ground, and these defendants aver further that said alleged Jordan Extension Mining Claim No. 423, said alleged Northern Light Mining Claim No. 53, said alleged Grizzly Mining Claim, No. 52, and said alleged Fairview Mining Claim, No. 54, lie to the north of and immediately adjoining said Kempton ground, and that the discovered and
21 existing lode in said Jordan Extension claim, Northern Light claim, Grizzly claim, and Fairview Claim has its top or apex in said Kempton ground, and extends in its dip northerly beyond the northerly vertical side line of said Kempton claim and underneath a part of the surface of said alleged Jordan Extension mining claim, Northern Light claim, Grizzly claim and Fairview claim, and is known as and called the Neptune Lode, and the same has hitherto for more than twenty five years before the commencement of this action, been continuously occupied, possessed, mined and worked by defendants and their grantors and predecessors in interest therein in its dip beyond the said northerly side line of said Kempton claim, and beneath the surface of said alleged Jordan Extension mining claim, Northern Light Mining claim, Grizzly mining claim, and the Fairview mining claim, as a lode having its top or apex in Kempton ground and belonging thereto as a part of said patent grant, all of which is hereinafter more specifically averred and set out.

Eighth: And these defendants further answering said amended bill of complaint, say:

That as to whether for more than two years last past plaintiff has been or still is the owner or in possession of two certain mining claims situated in West Mountain Mining District, Salt Lake County, State of Utah, and described in said amended bill as the "Jordan Silver Mining Company's Mine," but usually called the "Old Jordan," being lot 64 of the Surveyor General's Office, Mineral Entry No. 248, in the United States Land Office Salt Lake City, Utah, or also the Mountain Gem Lode mining claim, situated in said mining district as alleged and described in the ninth paragraph of plaintiff's said amended bill, these defendants, nor either of them, has any knowledge or information sufficient on which to form or base a belief, and therefore on that ground, they deny the same.

Ninth: And further answering said amended bill of complaint, these defendants say:

That as to whether the said Old Jordan Mining Claim or the Mountain Gem Mining Claim each contains a lode of rock in place bearing silver or other metals, or whether the alleged Old Jordan lode enters its alleged surface ground across the northeasterly end line thereof, or otherwise, or whether on its alleged strike or course, or whether at its alleged apex, said alleged lode runs southwesterly in said alleged claim, or otherwise, between nearly or actual lines parallel to the alleged side lines thereof, or within ground belonging to or not excepted therefrom for a distance of 1550 feet or any
22 distance, these defendants nor either of them, has sufficient knowledge or information on which to form or base a belief, and therefore on that ground they deny the same.

And they say further that as to whether the alleged Mountain Gem lode or vein enters across the northeasterly line, or any line of the alleged Mountain Gem Mining Claim, or continues on its alleged course, or at its alleged apex southwesterly or otherwise, between or nearly or actually to the alleged side lines of said alleged claim, or in ground not excepted from the alleged claim throughout the length or otherwise, of said alleged Mountain Gem Mining Claim, or whether the dip of said alleged lodes or either of them is northwesterly or otherwise to or toward the Kempton Mining Claim, these defendants nor either of them has any sufficient knowledge or information on which to form or base a belief, and therefore on that ground they deny the same, and each and all of said matters in the ninth paragraph of the said amended bill of complaint alleged and set out.

Tenth: And these defendants further answering the said amended bill of complaint, say:

That as to whether the said alleged Old Jordan Lode was located by qualified locators on the 17th day of December, 1863, or at any time, or in accordance with the laws or customs of miners or otherwise, or whether said alleged locators or their alleged successors or grantees held or worked or improved in accordance with said laws or mining customs or otherwise, or whether under said location or otherwise, upon compliance with laws and customs or otherwise, application for a United States Patent was made or granted, or whether the entry thereof was made in the Land Office on the 8th day of June, 1877, or at any time, or whether patent was issued therefor July 14th, 1877, or at any time, or whether by said or any grant to a grantee to whose title the complainant has succeeded, there was granted 5200 feet of said alleged Jordan Lode, or any part of any lode, or surface ground in said amended bill of complaint or otherwise described, these defendants have not nor has either of them any sufficient information or knowledge on which to form or base a belief, and therefore on that ground they deny the same and each and all of said matters in the said amended bill of complaint alleged and set out in the ninth paragraph thereof.

Eleventh: And these defendants further answering the said amended bill of complaint, say:

That as to whether the said alleged Mountain Gem Lode was located on the 20th day of August, 1864, or held or improved
23 by locators or their grantees or successors in accordance with mining laws or customs, or a United States Patent therefor granted on said alleged location or otherwise, or such subsequent compliance with laws or customs thereunder, or otherwise to a grantee to whose title or rights the said complainant has succeeded, these defendants have not nor has either of them any sufficient information or knowledge on which to form or base a belief, and therefore on that ground they deny the same, and each and all of said matters in the ninth paragraph of said amended bill of complaint alleged and set out.

Twelfth: And these defendants further answering the said amended bill of complaint, deny that if there is any mineral vein or lode in the said Kempton Mining Claim, dipping or extending to

or under the Jordan Extension Mining Claim, the Northern Light Mining Claim, the Grizzly Mining Claim, and the Fairview Mining Claim, that such lode or vein does not have an apex in the Kempton Mining Claim or belong thereto, or in any wise form a part thereof, and these defendants deny further that the same is a part of or belongs to the alleged Old Jordan or Mountain Gem Lodes or either of them, the property of said complainant, or that said alleged lodes or any lode or lodes or any lode or lodes in their dip or otherwise between protractions in their own alleged direction of the alleged parallel surface lines of said alleged claim, or otherwise, or at all, pass across or beneath their alleged side lines or extend beneath the surface or across the Kempton Mining Claim, or enter into or beneath the surface of the Jordan Extension Mining Claim, or Northern Light Mining Claim, or Grizzly Mining Claim, or Fairview Mining Claim or either of them, or that the ores found beneath or any ores beneath the surface of the last named claims in said alleged lodes are the same these defendants wrongfully or otherwise pretend are in or belong to a lode or lodes in the Kempton Mining Claim, but to the contrary thereof these defendants aver, that every known vein or lode of metaliferous ores, earth and rock in place existing in said alleged Jordan Extension Mining Claim, the Northern Light Mining Claim, the Grizzly Mining Claim, and the Fairview Mining Claim, including the lode and vein mentioned in complainant's amended bill of complaint, and including the said Neptune Lode has its top or apex within the surface lines of the said Kempton patented ground, and is a part of the same on their dip beyond the northerly vertical side line of said Kempton Claim, and the same and every part thereof in its dip lies between vertical planes drawn downward through the end lines of said Kempton claim protracted and so continued in their own direction, that such planes intersect the exterior parts of
24 such veins or ledges in their dip past the northerly vertical side line of said Kempton claim underneath the surface of said alleged Jordan Extension Claim, the Northern Light Claim, the Grizzly Claim, and the Fairview Claim, and constitute a part of the Kempton Lode Claim and the veins and lodes patented to the grantors and predecessors in interest of defendants by the said patent of February 23d, A. D. 1875.

Thirteenth: And these defendants for further and affirmative defense to said amended bill of complaint, aver and show to this Honorable Court:

That said defendants William J. Harvey and Edward Balbach, Junior, are the owners seized in fee, in the possession and entitled to the possession of undivided interests, and defendant Leonidas M. Lawson has a certain equitable estate therein, and defendant Enos A. Wall is a lessee for years in possession and entitled to the possession, and has also a certain equitable estate therein, of the said Kempton Lode mining claim, United States Lot No. 55 hereinbefore described, and that since the commencement of this action said defendant Wall has acquired and now holds in his own right all the interests, estate and title therein of the said defendants Heber M. Wells, Thomas Kearns and Junius F. Wells.

Fourteenth: And defendants further aver and show that there exists and is found within the said exterior surface boundaries of said Kempton claim, a large lode or vein of mineral and metaliferous ores, earth and rock in place, containing gold, silver, copper, lead and other metals, and which has its top or apex and outcrop wholly within said exterior boundaries of said claim, and which has its course or strike in an easterly and westerly direction, and parallel to, and coincident, or nearly so, with the side lines of said Kempton Claim, U. S. Survey No. 55.

Fifteenth: And defendants further aver that said vein or lode in its descent into the earth departs from a perpendicular, and has an inclination or dip from the horizon of about 30 degrees in a northerly direction, and in its said dip, passes out of and beyond the northerly vertical side line of said Kempton mining claim and premises, insomuch that it passes underneath adjoining surface ground and underneath the surface of said alleged lode mining claims, of said plaintiff, of which it claims to be the owner, and which are named as the Jordan Extension Claim, the Northern Light Claim, the Grizzly Claim, and the Fairview Claim, and defendants aver further that they and their predecessors in title therein, have mined and traced the said lode or vein from its top or apex at the surface in Kempton
25 ground as aforesaid, on its said dip underground and under said adjoining surface ground, beyond said northerly vertical side line to a depth of as much as 350 feet, but within protractions of the end lines of said Kempton claim on the surface extended downward vertically and so continued in their own direction that it includes the part of said lode which lies between vertical planes drawn downward through said end lines, that such planes do intersect the exterior part of said lode or vein on its said dip, outside the said northerly vertical side line of said Kempton Mining Claim, and the defendants are entitled under the provisions of the laws of the United States, and the terms of said patent granting said mineral lands to the predecessors in title of these defendants to the whole of said lode or vein on its dip throughout its entire depth and within the limits of the protractions of the said end lines as aforesaid, and underneath the adjoining surface ground aforesaid, and to all the mineral and metals and metaliferous and mineral ores, earth and rock therein contained.

Sixteenth: And defendants further aver and show that said plaintiff, United States Mining Company, is the owner of, or claims to be the owner and in possession of two lode mining locations adjoining said Kempton claim, called respectively the Old Jordan Mining Claim, and the Mountain Gem Mining Claim, situate in a southerly direction from said Kempton mining claim, and defendants aver further that if any lode or vein exists or is found in said Old Jordan Mining Claim or in said Mountain Gem Mining Claim, or in either of them which has its top or apex inside the exterior boundary lines thereof, the same is an entirely distinct and different lode or vein from that in Kempton ground hereinbefore described, the property of these defendants, notwithstanding which the said plaintiff asserts and pretends that the said lode and vein of these defendants is its

property, and that said lode has its top or apex either in the said Old Jordan Mining Claim or in the said Mountain Gem mining claim, and that in its dip to the north it dips underneath the surface of the Kempton claim past its exterior boundaries, as marked on the surface, insomuch that it dips underneath other alleged mining claims of which plaintiff claims to be the owner, which lie to the north of Kempton ground, the said alleged claims being those hereinbefore mentioned as the Jordan Extension Mining claim,—the Northern Light claim, the Grizzly Claim, and the Fairview Claim, and plaintiff asserts and pretends to have some claim to the said lode or vein of these defendants throughout its entire extent and depth, and to the minerals and metals and ores contained therein, and asserts that it is the lawful owner thereof, and entitled
26 thereto, in virtue of its said asserted rights of ownership of asserted apex thereof in said Old Jordan, or Mountain Gem ground, and also in virtue of its asserted ownership of overlying surface ground in said Jordan Extension, Northern Light, Grizzly, and Fairview claims, and asserts the right to mine and extract the said ores therefrom, all of which pretenses and assertions these defendants allege are false, fraudulent and fictitious and well known by said plaintiff to be so, and are without any foundation of right whatever, and defendants aver further that said plaintiff has not any right, interest, estate, title or right of possession whatever in or to said Kempton Mine, vein, or lode, or to any of the ores, minerals, or metals contained therein, or in any part thereof.

Wherefore, these defendants having fully answered the said amended bill, pray that the same be dismissed and that all orders heretofore entered on motion of plaintiff in this cause be vacated, and that defendants have such other and further relief as in the premises may be agreeable to equity, and that they have their costs.

OGDEN HILES,
Solicitor for Defendants.

STATE OF UTAH, *County of Salt Lake, ss:*

I, Enos A. Wall, being first duly sworn on oath, say, that I am one of the defendants in the above entitled cause, that I have heard read the foregoing, defendants' answer to the amended bill of complaint therein; that said answer is true of my own knowledge, except as to the matters therein stated on information and belief, and as to those matters I believe it to be true.

ENOS A. WALL.

Subscribed and sworn to before me this 26th day of July, A. D. 1902.

[SEAL.] JOSIAH THOMAS,
Notary Public.

Received a copy of the foregoing Answer this 26th day of July A. D. 1902.
BENNETT, SUTHERLAND,
VAN COTT & ALLISON,
Solicitors for Plaintiff.

Filed July 26, 1902. Jerrold R. Letcher, Clerk.

27 And afterwards, and on to-wit the 4th day of August, 1902, said plaintiff filed its Replication to the Answer of defendants, which, being entitled in this Court and Cause, is in words and figures following to-wit:

Replication to Answer.

This repliant, saving and reserving to itself all and all manner of advantage of exception, which may be had and taken to the manifold errors, uncertainties and insufficiencies of the answer of said defendants, for replication thereunto, saith, that it doth and will aver, maintain and prove its said bill to be true, certain and sufficient in the law to be answered unto by the said defendants, and that the answer of the said defendants is very uncertain, avasive and insufficient in law, to be replied unto by this repliant; without that, that any other matters or thing in the said answer contained, material or effectual in the law to be replied unto, and not herein and hereby well and sufficiently replied unto, confessed or avoided, traversed or denied, is true; all which matters and things this repliant is ready to aver, maintain and prove as this Honorable Court shall direct, and humbly prays as in and by its said bill it hath already prayed.

BENNETT, SUTHERLAND,
VAN COTT & ALLISON,
Solicitors for Complainant.

STATE OF UTAH, *County of Salt Lake, ss:*

I, A. F. Holden, being first duly sworn on oath say that I am an officer of the plaintiff corporation in the above entitled action, to-wit, the Managing Director thereof. That I have heard read the foregoing replication to the answer of the defendants herein; that said replication is true of my own knowledge, except as to the matters therein stated on information and belief, and as to these matters I believe it to be true.

A. F. HOLDEN.

Subscribed and sworn to before me this 4th day of August, 1902.
[SEAL.] JERROLD R. LETCHER,
Clerk U. S. Cir. Ct., Dist. Utah.

Copy served Augt 4, 1902.

OGDEN HILES,
Solicitor for Defendants.

Filed August 4, 1902. Jerrold R. Letcher, Clerk.

28 And afterwards, and on to-wit the 20th day of October, 1902, said defendants filed their amended answer herein which, being entitled in said Court and Cause, is in words and figures following to-wit:

Amended Answer.

In answer to the said amended bill the said defendants say as follows:

First: They admit the diverse citizenship of the parties plaintiff and defendants as the same is alleged in said amended bill, and that the amount in controversy in this suit exceeds the sum of two thousand ($2,000) dollars, exclusive of costs.

Second: That as to whether the said plaintiff before doing business in the State of Utah, complied with the laws thereof, by filing a certified copy of its articles of agreement or certificate of incorporation or by-laws with the Secretary of State, or with the County Clerk of Salt Lake County, in said State, or otherwise complied with the laws of said State as alleged in the first paragraph of said amended bill, these defendants or either of them have not sufficient knowledge or information on which to base a belief, and therefore, on that ground they deny the same.

Third: That as to whether the said plaintiff for more than two years last past, or for any time has been or is now the owner of the alleged lode mining claim called the "Jordan Extension" mining claim, or the "Northern Light" lode mining claim, or the "Grizzly" lode mining claim, or the "Fairview" lode mining claim as alleged in the fifth paragraph of said amended bill, or otherwise, these defendants or either of them have not sufficient knowledge or information on to which to base a belief, and therefore on that ground they deny the same.

Fourth: And these defendants further answering the said bill, deny that in or beneath the surface boundaries of said alleged Jordan Extension lode mining claim, or in the said Northern Light claim, of Grizzly claim, or Fairview claim, or under either of them extended downward vertically or otherwise, or at all, there is any vein or lode of mineral bearing rock in place carrying gold or silver, or copper or lead, or other valuable or any minerals or metals, or that said vein or lode or any vein or lode therein, or the minerals therein contained, is or are the property of plaintiff, but to the contrary thereof, these defendants aver that if any vein or lode exists or is found beneath the surface boundaries of said alleged Jordan Extension lode mining claim, or alleged Northern Light claim, or said
29 alleged Grizzly claim, or said alleged Fairview claim, the same is a vein or lode having its top or apex within the surface boundary lines of the patented Kempton lode mining claim, United States Lot No. 55, mentioned in said amended bill, the property of these defendants, they being the owners of said lode throughout its entire depth, together with all the minerals and meals therein contained, as is in this answer hereinafter more fully and specifically averred and set out.

And these defendants further deny that the said alleged Jordan Extension lode mining claim is valuable only or at all for the ores or minerals contained therein beneath the surface boundaries extended downward vertically or otherwise, or that said Northern

Light, or Grizzly, or Fairview alleged mining claims are valuable, or either of them is valuable only or otherwise, for the ores or minerals contained therein beneath the surface thereof extended downward vertically or otherwise, or that either of them, has or contains any discovered vein or lode whatever of mineral or metal bearing ores, earth or rock whatever, except the vein or lode belonging to these defendants which has its apex in Kempton ground as hereinafter averred and set out.

And these defendants further deny that any ores or minerals in said four alleged mining claims of plaintiff, or in either of them embraced within the surface boundaries thereof, excluding excepted areas, or otherwise, which defendants threaten to take or remove, are of great or any value, or of the value of more than $10,000, or the value of any sum of money whatsoever.

Fifth: These defendants deny that they or either of them assert or claim an interest in said premises, or in the ores or minerals therein contained adverse to the plaintiff, or otherwise, or that they or either of them assert or give out in speech or otherwise, that they are the owners of said ores or minerals therein contained in said premises beneath the surface, thereof or otherwise, or that there are any ores or minerals beneath the surface thereof belonging to the plaintiff, and defendants deny that the alleged claims or assertions, or any claims or assertions of defendants or either of them, are false or untrue or unfounded in fact, or are a cloud on the, or any title of plaintiff in the said described premises.

And these defendants deny further that within the two years last past, or at any time, these defendants or either of them, in assertion of their alleged claims or interest in or to the ores or minerals contained in said premises beneath the surface thereof, or otherwise, or at all, have wrongfully or unlawfully, by means of secret underground works, drifts, or excavations, or by other means, or without the knowledge or consent of plaintiff or otherwise, or at all, entered into or upon the said Jordan Extension mining claim, or the Northern Light mining claim, or the Grizzly mining claim, or the Fairview mining claim, or beneath the surface thereof, or have mined, extracted or removed large or any quantities of valuable or other ores or minerals therein contained, the property of plaintiff.

Sixth: And these defendants further answering the said amended bill of complaint, deny that defendants or either of them in the assertion of their said alleged claims of ownership to said premises or the ores or minerals therein contained, or otherwise, or at all, give out in speech, or threaten to continue their said, or any wrongful or unlawful claims, or any claims to said premises, or to continue their said wrongful or unlawful invasion of said premises of plaintiff, or that they or either of them ever did assert or claim any title whatever to said alleged Jordan Extension lode mining claim, or said alleged Northern Light lode mining claim, or said alleged Grizzly lode mining claim, or said alleged Fairview mining claim, or any part thereof or of any lode or vein therein contained having its top or apex within or beneath the surface boundaries thereof,

or that they or either of them ever in any manner invaded the same, or that they threaten to continue, or that they ever did mine or extract or remove, to the great and irreparable injury or damage of plaintiff, or otherwise, or at all, any ores or minerals contained in said premises vertically beneath the surface boundaries thereof, or that they or either of them will, unless enjoined or restrained by the order of this Honorable Court, or otherwise, continue their said or any unlawful or wrongful acts, or will continue to mine or extract or remove from said premises vertically beneath the surface thereof or otherwise, any of the ores or minerals therein contained, the property of plaintiff, to its great or irreparable damage or injury, or to its damage or injury, at all, or to the destruction or other injury of said premises.

Seventh: And these defendants further answering the said amended bill of complaint, admit that they are in possession of and are working a certain mining claim adjoining the alleged Jordan Extension mining claim, the Northern Light Mining Claim, the Grizzly mining claim, and the Fairview mining claim, situated in the West Mountain Mining District, Salt Lake County, State of Utah, known as the Kempton Mining Claim, U. S. Lot No. 55, and which was located in the year A. D. 1871, but these defendants deny
31 that they or either of them allege or pretend that the mineral vein deposits or ores under and beneath the surface of the said Jordan Extension Mining Claim, Lot 423, or the Northern Light mining claim, Lot 53, or the Grizzly Mining Claim, Lot 52, or the Fairview Mining Claim, Lot 54, are in or part of a mineral vein or lode belonging to the said Kempton mining claim, or having its apex therein, or pretend that they, the said defendants have the right, as the owners or occupants of said mining claim, to enter or extract ores from beneath the surface of the Jordan Extension, Lot 423, or the Northern Light, Lot 53, or the Grizzly, Lot 52, or the Fairview, Lot 54, but to the contrary thereof, these defendants aver, that the fact is, that some of them are the owners seized in fee, and with their other co-defendants herein who are lessees thereof for years, are in the peaceable occupation and possession and entitled to the possession of the said Kempton Mine and mining claim, in and embracing the Neptune lode, lying and being situate in said Mining District, County and State, particularly described as follows, to-wit:

Beginning at Corner No. one (1), marked "U. S. 55 No. 1", thence south fourteen (14) degrees thirty (30) minutes west sixty (60) feet to a post at the intersection of southerly boundary of Survey No. 53, made for the claim of George Hardie upon the Northern Light mining claim; two hundred (200) feet to Corner post No. 2, marked "U. S. 55 No. 2", thence South seventy-five (75) degrees thirty (30) minutes East two hundred and eighty-five (285) feet to Corner Post No. 3, marked "U. S. 55 No. 3", thence North seventy-one (71) degrees thirty (30) minutes East one hundred and ninety-five (195) feet to Corner Post No. 4, marked "U. S. 55 No. 4", thence North fifty-one (51) degrees thirty (30) minutes East five hundred and eighty-four (584) feet to Corner Post No. 5, marked "U. S. 55 No. 5", thence North fourteen (14) degrees thirty (30) minutes East

three hundred and thirty-six (336) feet to Corner Post No. 6, marked "U. S. 55 No. 6", thence south fifty-one (51) degrees thirty (30) minutes West eight hundred and fourteen (814) feet to Corner Post No. 7, marked "U. S. 55 No. 7", thence South seventy-one (71) degrees thirty (30) minutes West one hundred (100) feet to Corner Post No. 8, marked "U. S. 55 No. 8", thence North seventy-five (75) degrees thirty (30) minutes West sixty-seven (67) feet to a post at point of intersection with easterly boundary of said survey No. 53, thence two hundred and twenty-two (222) feet to the place of beginning, containing four and eighty-eight hundredths (4.88/100) acres of land, more or less, patent therefor having been granted by the Government of the United States on or about the 23d day of February A. D. 1875, to the grantors and predecessors in in-
32 terest of these defendants, together with all the mineral therein, and all metalliferous lodes and veins embraced therein, the tops or apices of which lie inside of said surface boundaries and lines extended downward vertically, although such veins and lodes so far depart from a perpendicular in their course downward as to extend outside the vertical side lines of said claim and location, and including therein the said Neptune Lode and vein which has its top and apex within said surface boundaries in Kempton ground, and these defendants aver further that said alleged Jordan Extension mining claim No. 423, said alleged Northern Light mining claim, No. 53, said alleged Grizzly mining claim, No. 52, and said alleged Fairview mining claim, No. 54, lie to the north of and immediately adjoining said Kempton ground, and that the discovered and existing lode in said Jordan Extension claim, Northern Light claim, Grizzly claim, and Fairview claim has its top or apex in said Kempton ground, and extends in its dip northerly beyond the northerly vertical side line of said Kempton claim and underneath a part of the surface of said alleged Jordan Extension mining claim, Northern Light claim, Grizzly claim, and Fairview claim, and is known as and called the Neptune Lode, and the same has hitherto for more than twenty-five years before the commencement of this action, been continuously occupied, possessed, mined and worked by defendants and their grantors and predecessors in interest therein in its dip beyond the said northerly side line of said Kempton claim, and beneath the surface of said alleged Jordan Extension mining claim, Northern Light mining claim, Grizzly mining claim, and the Fairview mining claim, as a lode having its top or apex in Kempton ground and belonging thereto as a part of said patent grant, all of which is hereinafter more specifically averred and set out.

Eighth: And these defendants further answering said amended bill of complaint, say:

That as to whether for more than two years last past plaintiff has been or still is the owner or in possession of either two certain mining claims situated in West Mountain Mining District, Salt Lake County, State of Utah, and described in said amended bill as the "Jordan Silver Mining Company's Mine", but usually called the "Old Jordan", being lot 64 of the Surveyor General's Office, Mineral Entry No. 248, in the United States Land Office, Salt Lake City, Utah, or

also the Mountain Gem lode mining claim, situated in said mining district as alleged and described in the ninth paragraph of plaintiff's said amended bill, these defendants, nor either of them, has any knowledge or information sufficient on which to form or base a belief, and therefore on that ground, the deny the same.

33 Ninth: And further answering said amended bill of complaint, these defendants say:

That as to whether the said Old Jordan Mining Claim or the Mountain Gem Mining Claim each contains a lode of rock in place bearing silver or other metals, or whether the alleged Old Jordan lode enters its alleged surface ground across the northeasterly end line thereof, or otherwise, or whether on its alleged strike or course, or whether at its alleged apex, said alleged lode runs southwesterly in said alleged claim, or otherwise, between nearly or actual lines parallel to the alleged side lines thereof; or within ground belonging to or not excepted therefrom for a distance of 1550 feet or any distance, these defendants nor either of them, has any sufficient knowledge or information on which to form or base a belief, and therefore on that ground they deny the same.

And they say further that as to whether the alleged Mountain Gem lode or vein enters across the northeasterly line, or any line of the alleged Mountain Gem Mining Claim, or [continuous] on its alleged course, or at its alleged apex southwesterly or otherwise, between or nearly or actually to the alleged side lines of said alleged claim, or in ground not excepted from the alleged claim throughout the length or otherwise, of said alleged Mountain Gem mining claim, or whether the dip of said alleged lodes or either of them is northwesterly or otherwise to or toward the Kempton mining claim, these defendants nor either of them has any sufficient knowledge or information on which to form or base a belief, and therefore on that ground they deny the same, and each and all of said matters in the ninth paragraph of the said amended bill of complaint alleged and set out.

Tenth: And these defendants further answering the said amended bill of complaint, say:

That as to whether the said alleged Old Jordan Lode was located by qualified locators on the 17th day of December, 1863, or at any time, or in accordance with the laws or customs of miners or otherwise, or whether said alleged locators or their alleged successors or grantees held or worked or improved in accordance with said laws or mining customs or otherwise, or whether under said location or otherwise, upon compliance with laws and customs or otherwise, application for a United States Patent was made or granted, or whether the entry thereof was made in the Land Office on the 8th day of June, 1877, or at any time, or whether patent was issued therefor

34 July 14th, 1877, or at any time, or whether by said or any grant to a grantee to whose title the complainant has succeeded, there was granted 5200 feet of said alleged Jordan Lode, or any part of any lode, or surface ground in said amended bill of complaint or otherwise described, these defendants have not nor has either of them any sufficient information or knowledge on which to

form or base a belief, and therefore on that ground they deny the same and each and all of said matters in the said amended bill of complaint alleged and set out in the ninth paragraph thereof.

Eleventh: And these defendants further answering the said amended bill of complaint, say:

That as to whether the said alleged Mountain Gem lode was located on the 20th day of August, 1864, or held or improved by locators or their grantees or successors in accordance with mining laws or customs, or a United States Patent therefor granted on said alleged location or otherwise, or such subsequent compliance with laws or customs thereunder, or otherwise to a grantee to whose title or rights the said complainant has succeeded, these defendants have not nor has either of them any sufficient information or knowledge on which to form or base a belief, and therefore on that ground they deny the same, and each and all of said matters in the ninth paragraph of said amended bill of complaint alleged and set out.

Twelfth: And these defendants further answering the said amended bill of complaint, deny that if there is any mineral vein or lode in the said Kempton mining claim, dipping or extending to or under the Jordan Extension mining claim, the Northern Light mining claim, the Grizzly mining claim, and the Fairview mining claim, that such lode or vein does not have an apex in the Kempton mining claim or belong thereto, or in any wise form a part thereof, and these defendants deny further that the same is a part of or belongs to the alleged Old Jordan or Mountain Gem lodes or either of them, the property of said complainant, or that said alleged lodes or any lode or lodes or any lode or lodes in their dip or otherwise between protractions in their own alleged direction of the alleged parallel surface lines of said alleged claim, or otherwise, or at all, pass across or beneath their alleged side lines or extend beneath the surface or across the Kempton Mining Claim, or enter into or beneath the surface of the Jordan Extension Mining Claim, or Northern Light mining claim, or Grizzly mining claim, or Fairview mining claim, or either of them, or that the ores found beneath or any ores beneath the surface of the last named claim in said alleged lodes are the same these defendants wrongfully or otherwise pretend are in or belong
35 to a lode or lodes in the Kempton mining claim, but to the contrary thereof these defendants aver, that every known vein or lode of metal bearing ores, earth and rock in place existing in said alleged Jordan Extension mining claim, the Northern Light mining claim, the Grizzly mining claim, and the Fairview mining claim, including the lode and vein mentioned in complainant's amended bill of complaint, and including the said Neptune Lode has its top or apex within the surface lines of the said Kempton patented ground, and is a part of the same on their dip beyond the northerly vertical side line of said Kempton claim, and the same and every part thereof in its dip lies between vertical planes drawn downward through the end lines of said Kempton claim protracted and so continued in their own direction, that such planes intersect the exterior parts of such veins or ledges in their dip past the northerly vertical side line of said Kempton claim underneath the surface of said al-

leged Jordan extension claim, the Northern Light claim, the Grizzly claim, and the Fairview claim, and constitute a part of the Kempton lode mining claim and the veins and lodes patented to the grantors and predecessors in interest of defendants by the said patent of February 23d, 1875.

Thirteenth: And these defendants for further and affirmative defense to said amended bill of complaint, aver and show to this Honorable Court:

That said defendants William J. Harvey and Edward Balbach, Junior, are the owners seized in fee, in the possession and entitled to the possession of undivided interests, and defendant Leonidas M. Lawson has a certain equitable estate therein, and defendant Enos A. Wall is a lessee for years in possession and entitled to the possession, and has also a certain equitable estate therein, of the said Kempton lode mining claim, United States Lot No. 55 hereinbefore described, and that since the commencement of this action said defendant Wall has acquired and now holds in his own right all the interests, estate and title therein of the said defendants Heber M. Wells, Thomas Kearns and Junius F. Wells.

Fourteenth: And defendants further aver and show that there exists and is found within the said exterior surface boundaries of said Kempton claim, a large lode or vein of mineral and metal bearing ores, earth and rock in place, containing gold, silver, copper, lead, and other metals, and which has its top or apex and outcrop wholly within said exterior boundaries of said claim, and which has its course or strike in an easterly and westerly direction, and parallel to, and coincident or nearly so, with the side lines of said Kempton claim, U. S. Survey No. 55.

36 Fifteenth: And defendants further aver that said vein or lode in its descent into the earth departs from a perpendicular, and has an inclination or dip from the horizon of about 30 degrees in a northerly direction, and in its said dip passes out of and beyond the northerly vertical side line of said Kempton mining claim and premises, insomuch that it passes underneath adjoining surface ground and underneath the surface of said alleged lode mining claims of said plaintiff, of which it claims to be the owner, and which are named as the Jordan Extension claim, the Northern Light claim, the Grizzly claim, and the Fairview claim, and defendants aver further that they and their predecessors in title therein, have mined and traced the said lode or vein from its top or apex at the surface in Kempton ground as aforesaid, on its said dip underground and under said adjoining surface ground, beyond said northerly vertical side line to a depth of as much as 350 feet, but within protractions of the end lines of said Kempton claim on the surface extended downward vertically and so continued in their own direction that it includes the part of said lode which lies between vertical planes drawn downward through said end lines, that such planes do intersect the exterior part of said lode or vein on its said dip, outside the said northerly vertical side line or said Kempton mining claim, and the defendants are entitled under the provisions of the laws of the United States, and the terms of said patent granting said

mineral lands to the predecessors in title of these defendants to the whole of said lode or vein on its said dip throughout its entire depth and within the limits of the protractions of the said end lines as aforesaid, and underneath the adjoining surface ground aforesaid, and to all the mineral and metals and metalliferous and mineral bearing ores, earth and rock therein contained.

Sixteenth: And defendants further aver and show that said plaintiff, United State Mining Company, is the owner of, or claims to be the owner and in the possession of two lode mining locations adjoining said Kempton claim, called respectively the Old Jordan Mining Claim, and the Mountain Gem mining claim, situate in a southerly direction from said Kempton mining claim, and defendants aver further that if any lode or vein exists or is found in said Old Jordan mining claim or in said Mountain Gem mining claim, or in either of them which has its top or apex inside the exterior boundary lines thereof, the same is an entirely distinct and different lode or vein from that in Kempton ground hereinbefore described, the property of these defendants, notwithstanding which the said plaintiff asserts and pretends that the said lode or vein of these
37 defendants is its property, and that said lode has its top or apex either in the said Old Jordan mining claim or in the said Mountain Gem mining claim, and that in its dip to the north it dips underneath the surface of the Kempton claim past its exterior boundaries, as marked on the surface, insomuch that it dips underneath other alleged mining claims of which plaintiff claims to be the owner, which lie to the north of Kempton ground, the said alleged claims being those hereinbefore mentioned as the Jordan Extension mining claim, the Northern Light claim, the Grizzly claim, and the Fairview claim, and plaintiff asserts and pretends to have some claim to the said lode or vein of these defendants throughout its entire extent and depth, and to the minerals and metals and ores contained therein, and asserts that it is the lawful owner thereof, and entitled thereto, in virtue of its said asserted rights of ownership of asserted apex thereof in said Old Jordan, or Mountain Gem ground, and also in virtue of its asserted ownership of overlying surface ground in said Jordan Extension, Northern Light, Grizzly, and Fairview claims, and asserts the right to mine and extract the said ores therefrom, all of which pretenses and assertions these defendants allege are false, fraudulent and fictitious and well known by plaintiff to be so, and are without any foundation of right whatever, and defendants aver further that said plaintiff has not any right, interest, estate, title or right of possession whatever in or to said Kempton mine, vein, or lode, or to any of the ores, minerals, or metals contained therein, or in any part thereof.

II.

As a further and separate defense to said bill of complaint these defendants allege and show unto this Honorable Court:

First. That the Ivanhoe Mining Company is a corporation organized, and existing under the laws of the State of California, and

a citizen thereof, and that it is the owner, seized in fee, in the possession and entitled to the possession, and the defendant Enos A. Wall is the lessee for years in posession and entitled to the posession of a certain patented lode mining claim and premises lying and being situate in said West Mountain Mining District, Salt Lake County, Utah, bounded on the surface and described as follows, to-wit:

Beginning at corner No. one (1), from which United States Mineral Monument No. one (1) bears North eighty (80) degrees twenty-eight (28) minutes East eleven hundred and eighty-six (1186) feet, and running thence North fifty-four (54) degrees West two hundred (200) feet to corner No. two (2), thence North thirty-six
38 (36) degrees East one hundred and ninety-three (193) feet to corner No. three (3), thence North twenty-eight (28) degrees East twelve hundred and seven (1207) feet to corner No. four (4), thence South fifty-four (54) degrees East two hundred and two feet to corner No. five (5), thence South twenty-eight (28) degrees West eleven hundred and ninety-three (1193) feet to corner No. six (6), thence South thirty-six (36) degrees West two hundred and seven feet (207) to corner No. one (1) the place of beginning, containing five and seventy-four one hundredths acres, (5.74 acres), excepting however and excluding therefrom such portions thereof as are embraced in the Northern Light, Orphan Boy, and Kempton Mining Claims, the same being the "Ashland" lode mining claim, U. S. Lot numbered 67, in said Mining District, and containing two acres and seventy-two one hundredths of an acre (2.72 acres), besides the said excluded ground, patent therefor having been granted by the government of the United States of America on or about the 27th day of September, A. D. 1875, to the predecessors in title of said Ivanhoe Mining Company and Enos A. Wall, together with all the minerals and metals therein, and all lodes, ledges, or veins of mineral and metal bearing ores, earth and rock in place embraced therein throughout their entire depth, which lie within and which have their tops or apices within the said exterior surface boundary lines of said Ashland lode mining claim extended downward, although such lodes or veins in their course downward so far depart from a perpendicular, as to extend outside the vertical side lines of said Ashland claim, and all such portions thereof as lie between vertical planes drawn downward through the end lines of said claim on protractions thereof, so continued in their own direction, that such planes will intersect such exterior parts of such veins or ledges, and all the minerals and metals therein contained.

Second. And these defendants further allege and show that a large lode or vein of mineral and metal bearing ores, earth and rock in place, containing gold, silver, copper, lead and other metals, exists and is found throughout more than nine hundred (900) feet in length of said Ashland claim and location so as aforesaid owned and possessed by said Ivanhoe Mining Company and its lessee, Enos A. Wall. That the same in its strike passes through the southwesterly end line thereof and has its top or apex within the said side lines thereof throughout the entire length aforesaid; that the general

course or strike of said lode is nearly or quite parallel to the side lines thereof, and said Ivanhoe Mining Company and its said lessee, the defendant Wall, are entitled, under the provisions of the laws of the United States and the terms of the said patent granting said mineral land to the predecessors in title of said Ivanhoe Min-
39 ing Company, and said lessee, the defendant Wall, to the whole of said vein or lode on its dip beyond the vertical side lines of said claim throughout its entire depth, and within the limits of the protractions of the said end lines as aforesaid, and to all the metals and the mineral and metal bearing ores, earth and rock therein contained.

Third: And these defendants further allege and show that said vein or lode in its descent into the earth departs from a perpendicular, and has an inclination or dip from the horizon of about 70 degrees in a northwesterly direction, and in its said dip passes out of and beyond the northwesterly vertical side line of said Ashland mining claim and premises, insomuch that it passes underneath adjoining surface ground, but within protractions of the end lines of said Ashland claim on the surface extended downward vertically, and so continued in their own direction, that they include the part of said lode which lies between vertical planes drawn downward through said end lines, and that such planes do intersect the exterior part of said lode or vein on its said dip outside the said northwesterly side line of said Ashland mining claim underneath said adjoining surface ground, and specifically under the adjoining surface ground known as and called the Grizzly claim, the Northern Light claim, and the Fairview claim hereinafter mentioned.

Fourth: And these defendants further show, that the said plaintiff herein owns or asserts ownership to certain alleged mining claims to the northwest of said Ashland claim, the same being the above named Grizzly, Northern Light, and Fairview claims, and underneath which the said lode of the said Ivanhoe Mining Company and Enos A. Wall dips as aforesaid from its said outcrop and apex in Ashland ground.

Fifth: That said plaintiff United States Mining Company, is the owner or claims to be the owner of two certain alleged lode mining locations or claims called the Old Jordan Mining Claim and the Mountain Gem mining claim, and also of the said Northern Light, Grizzly and Fairview claims; that if any lode or vein exists or is found in said claims or in either of them, which has its top or apex inside the exterior boundary lines thereof, the same is an entirely distinct and different lode or vein from that in Ashland ground hereinbefore described; the property of the said Ivanhoe Mining Company and of the said Lessee, the defendant Wall, notwithstanding which the said plaintiff asserts and pretends that the lode and vein of said Ivanhoe Mining Company and its lessee, the defendant Wall, has its top or apex in some or either of said claims, and that in its dip to the north it dips underneath the surface of said
40 Northern Light or Grizzly or Fairview claims, and plaintiff asserts and pretends to have some claim to the said lode or vein of the said Ivanhoe Mining Company and its said lessee through-

out its entire extent and depth, and to the minerals and metals and ores contained therein, and asserts that it is the lawful owner thereof and entitled thereto in virtue of its ownership of said Old Jordan or Mountain Gem, or Jordan Extension, or Northern Light, or Grizzly, or Fairview claim, and asserts the right to mine and extract the ores therefrom, all of which pretenses and assertions these defendants allege are false, fraudulent and fictitious and well known by said plaintiff so to be, and are without any foundation or right whatever; and defendants further aver that said plaintiffs has not any right, interest, estate, title or right of possession whatever in or to said Ashland mine, vein or lode or any of the ores, minerals or metals contained therein, or in any part thereof.

Sixth: And these defendants further aver and show that the fact of the dip if said Ashland lode underneath said Grizzly, Northern Light, and Fairview ground was discovered by these defendants and particularly by said defendant Wall, the lessee as aforesaid of the said Ivanhoe Mining Company by underground development work and surface work and inspection done and made since the filing of the original answer in this action, and defendants aver that there is now existing and in force a provisional injunction issued out of this Honorable Court, restraining and enjoining said defendant Wall and the other defendant from mining in or extracting ores from underneath said Grizzly, Northern Light and Fairview claims pending this litigation; that said Ivanhoe Mining Company, as the owner of the title in fee to said premises and lode, is interested in having said injunction removed and vacated as against its said lessee the defendant Wall, and defendants aver therefore, that for that and for divers other good and legal reasons, that the said Ivanhoe Mining Company is a proper and necessary party defendant in this action.

Wherefore the premises considered, these defendants pray:

1. That an order be entered that said Ivanhoe Mining Company be made a party defendant in this cause.

2. These defendants pray as in their original answer that said amended bill of the plaintiff be dismissed, and that all orders heretofore entered on motion of plaintiff in this cause be vacated,
41 and that defendants have such other and further relief as in the premises may be agreeable to equity, and that they may have their costs.

OGDEN HILES,
Solicitor for Defendants.

L. R. ROGERS,
Of Counsel.

STATE OF UTAH, *County of Salt Lake, ss:*

I, Enos A. Wall, being first duly sworn on oath, say, that I am one of the defendants in the above entitled cause, that I have heard read the foregoing defendants' amended answer to the amended bill of complaint therein; that said Amended Answer is true of my own knowledge except as to the matters therein stated on information and belief, and that as to those matters, I believe it to be true.

ENOS A. WALL.

Subscribed and sworn to before me this 17th day of October, A. D. 1902.

[SEAL.] JOSIAH THOMAS, *Notary Public.*

Filed October 20, 1902. Jerrold R. Letcher, Clerk.

And afterwards, and on the 28th day of October, 1902, the replication of plaintiff to amended answer of defendants was filed, which, being entitled in said court and cause, is in words and figures following, to-wit:

Replication to Amended Answer.

The Replication of the Above Named Plaintiff to the Amended Answer of the Above Named Defendants.

This replicant, saving and reserving to itself all and all manner of advantage of exception which may be had and taken to the manifold errors, uncertainties, and insufficiencies of the amended answer of said defendants, for replication thereunto sayeth that it does and will ever maintain and prove its said bill to be true, certain, and sufficient in the law to be answered unto by said defendants, and that the amended answer of said defendants is very uncertain, evasive, and insufficient in the law to be replied unto by this replicant; without that, that any other matter or thing in the said amended answer contained material or effectual in the law to be replied to, confessed, or avoided, traversed, or denied, is true; all which matters
42 and things this replicant is ready to aver, maintain, and prove as this honorable court shall direct, and humbly as in and by its said bill it has already prayed.

BENNETT SUTHERLAND,
VAN COTT & ALLISON,
DICKSON, ELLIS & ELLIS,
Solicitors for Plaintiff.

Filed October 28, 1902. Jerrold R. Letcher, Clerk.

And afterwards, and on the 20th day of October, 1902, a stipulation in writing was filed in said cause *in re* evidence which, being entitled in said court and cause, is in words and figures following to-wit:

Stipulation In Re Evidence.

It is stipulated between the parties, by their respective attorneys, that upon the trial of the above entitled action the plaintiff and defendants respectively may, in proving ownership by them respectively of the lode mining claims involved in this action, introduce in evidence an abstract or abstracts of the title to said mining claims, certified by the county recorder of Salt Lake County, Utah, or by any licensed abstractor of titles in said Salt Lake County; and

it is further stipulated that the due execution, acknowledgment, certification of the acknowledgment, witnessing, delivery and record of all instruments so abstracted shall be deemed proven by the offer in evidence of the abstracts with like effect as though the originals or duly certified copies thereof with the other required proofs were offered instead, except only as to such of said instruments abstracted to which the attorneys of either party may specifically object, and that as to such instruments thus objected to, the original or certified copy thereof must be furnished by the party objecting.

It is further stipulated that the abstracts of title aforesaid shall be furnished by each party to the attorneys for the other party hereto for inspection on or before ——, 1902.

Dated October —, 1902.

BENNETT SUTHERLAND,
VAN COTT & ALLISON,
Attorneys for Plaintiff.
OGDEN HILES,
Attorney for Defendants.

Filed October 20, 1902. Jerrold R. Letcher, Clerk.

43 And afterwards, and on the 20th day of October, 1902, an order was made making other parties party defendant, also *in re* certain motions, which being continued from day to day, and being entitled in said Court and Cause, are in words and figures following, to-wit:

Trial Begun—Answer Amended—New Party—Motion to Dismiss.

At this day this cause came on for trial—George Sutherland and W. H. Dickson appearing for plaintiff and Ogden Hiles and L. R. Rogers appearing for defendants—On motion of said defendants, leave is given them to file an amended answer to the amended bill of complaint herein,—and thereupon, on further motion of defendants, plaintiff consenting thereto, it is Ordered that the Ivanhoe Mining Company be made a party defendant to this action; which is accordingly done. And thereupon came the evidence—and plaintiff, to sustain the issues in its behalf, presented and filed a stipulation as to the proof to be made herein concerning the title to the properties in dispute, and pursuant thereto, introduced certain documentary evidence; and Barney MacMannan, J. Fewson Smith, jr., and Albert F. Holden were sworn and examined as witnesses in behalf of said plaintiff and plaintiff then rested, and thereupon, the defendants moved the Court to dismiss the amended bill of complaint in this cause,—or to enter an order directing that plaintiff be required to plead the facts which involve the law issues in the case which appear on the face of the amended bill, and now in the evidence which has been elicited by plaintiff in support of it—the hearing of which was continued until the hour of adjournment.

And on the 21st day of October, 1902, the following proceedings were had in continuation of the previous day's:

Trial Continued—Motion Renewed—Complaint Amended.

At this day come again the parties and the trial of this cause is resumed. Albert F. Holden is recalled by the plaintiff for further examination; and thereupon, said defendants renew their motion to dismiss the amended bill of complaint in this cause—or to enter an order directing that plaintiff be required to plead the facts which involve the law issues in this case which appear on the face of the amended bill, and now in the evidence which has been elicited by plaintiff in support of it,—which, after argument by counsel for the respective parties, is submitted and by the Court taken under advisement. On motion of plaintiff, leave is given it to amend its bill of complaint by striking therefrom the words—"And the
44 Fairview Mining Claim"—in the 7th paragraph of said bill;
—which is accordingly done. And to support the issues in their behalf, defendants then introduced certain documentary evidence, and called as witnesses, L. U. Colbath, Adolph Jesson and Frank C. Morehouse—who were sworn and examined the further hearing of which was continued until the hour of adjournment.

And on the 22nd day of October, 1902, the following proceedings were had in continuation of those of the previous day.

Trial Continued.

At this day come again the parties and the trial of this cause is resumed. And Frank C. Morehouse is recalled by the defendants for further examination; and James E. Beveridge, William R. Smith and George L. Hannahs are called as witnesses and sworn and examined on behalf of said defendants—the further hearing of which is continued until the hour of adjournment.

And also on October 23, 1902, the following proceedings were had:

At this day come again the parties and the trial of this cause is resumed. George L. Hannahs is recalled by defendants for further examination; and Isaac B. Hazelgrove, Heber McNeil, E. A. Wall and R. G. Legg are sworn and examined on the part of the defendants, and the defendants then rest. And thereupon, plaintiff, in rebuttal, introduces certain documentary evidence, and recalls J. Fewson Smith, jr., and Albert F. Holden,—the hearing of which is continued until the hour of adjournment.

On October 24, 1902, the following proceedings were had:

At this day come again said parties and the trial of this cause is resumed. The further examination of witnesses in behalf of said plaintiff in rebuttal is continued, A. F. Holden and J. Fewson Smith, jr., being recalled, and certain documentary evidence is introduced—Andrew P. Mayberry, Michael Gibbons, Charles Brink, O. A. Palmer and Atha Williams are sworn and examined—the further hearing of which is continued until the hour of adjournment.

On October 25, 1902, the following:

At this day come again said parties and the trial of this cause is resumed. And Sydney W. Tylor is called as a witness and sworn and examined on behalf of said plaintiff in rebuttal, and the plaintiff then rests. And thereupon, the further hearing of this cause is postponed until Monday morning, October 27, 1902, at the hour of nine thirty o'clock.

45 And on October 27, 1902, the following was had:

At this day come again said parties and the trial of this cause is resumed. And thereupon said defendants introduced further documentary evidence,—and in support of certain portions thereof, C. R. Savage and Henry Ellis are sworn and examined,—and Frank C. Morehouse, James E. Beveridge, R. G. Legg and Adolph Jesson are recalled for further testimony on the part of defendants,—and the defendants then call Warren L. Wilkes and James W. Neill, who are sworn and examined, after which Enos A. Wall is recalled and examined and the defendants then rest. Whereupon plaintiff recalls Sidney W. Tyler for further examination on its behalf—the further hearing of the cause being continued until the hour of adjournment.

Answer Further Amended—Replication Filed—Trial Concluded.

And on October 28, 1902, the following proceedings were had:

At this day come again the said parties—and the trial of this cause is resumed;—and it appearing from the records herein that the Ivanhoe Mining Company has been made a party defendant to this action. Now come Ogden Hiles and L. R. Rogers, and enter their appearance as solicitors for said company,—and, on their motion, it is Ordered that the Amended Answer now on file herein, be further amended by inserting therein the name of the said Ivanhoe Mining Company, by interlineation, and that the said answer, so amended, shall in all things stand for the answer of said Ivanhoe Mining Company as well as of the other defendants;—which is now accordingly done—and thereupon by leave of court, the plaintiff files its replication thereto. And the Court having heard the argument of counsel—as well for the defendant as for the plaintiff—the cause is submitted and by the Court taken under advisement.

On the 19th day of November, A. D. 1902, the record of the testimony given and proceedings had on the trial of this cause before the Honorable John A. Riner, Judge, was filed in the office of the Clerk of this Court, which, being entitled in said Court and Cause, is in words and figures following, to-wit:

Testimony, Proof and Proceedings.

Beginning on the 20th day of October, 1902, and concluding on the 28th day of October, 1902, William H. Dickson and George Sutherland appearing as solicitors and counselors for plaintiff and Ogden Hiles and Lindsey R. Rogers appearing for defendant.

46 On motion of said plaintiff, it is Ordered that the Ivanhoe Mining Company be made a party defendant herein and that the bill herein be amended by interlineation by inserting the name *of the Ivanhoe Mining Company* **wherever proper in the bill, which** was thereupon accordingly done. And thereupon, defendants were given leave to file an amendment to their answer to the bill herein by consent of said plaintiff, and were also given leave to prepare and file during the course of the trial the answer of the Ivanhoe Mining Company to the bill of complaint herein.

And thereupon said plaintiff, by its counsel W. H. Dickson stated to the Court the case expected to be made by it, and defendants electing to make the opening statement on their part at the close of plaintiff's case, said plaintiff, to maintain the issues on its part gave in evidence the following, that is to say:

Mr. SUTHERLAND: Pursuant to the stipulation entered into between the parties hereto and on file, and to which I have called your Honor's attention, we first offer in evidence the patent of the United States to George Hardie to the Northern Light lode mining claim, being lot No. 53. The patent is dated May 15th, 1875.

Mr. HILES: I wish at this point to state an objection. The bill of complaint filed in this case we assert is an ejectment bill. At the proper time I wish to make a motion to dismiss it upon the ground that there are law issues which are and ought to be tried by a jury, and we shall then present reasons which we think will result in an order for the dismissal of the case. I have no objection to the instrument just offered in evidence.

Mr. SUTHERLAND: It purports to convey as we shall hereafter show by a surveyor, the Northern Light claim, Lot No. 53.

Said patent was marked "Exhibit A, J. W. C." and received in evidence.

EXHIBIT "A."

General Land Office
No. 1346

Mineral Certificate
No. 117

The United States of America to all to whom these Presents shall come, Greeting:

Whereas, in pursuance of the Act of Congress, approved July twenty-sixth eighteen hundred and sixty six, entitled "An Act granting the right of way to ditch and canal owners over the public lands and for other purposes;" the act amendatory thereof approved July ninth, eighteen hundred and seventy, and the act
47 approved May tenth, eighteen hundred and seventy-two, entitled "An Act to promote the development of the mining resources of the United States" there have been deposited in the General Land Office of the United States the Plat and Field Notes of Survey of the claim of

George Hardie
upon the Northern Light Lode,

accompanied by the Certificate of the Register of the Land Office at Salt Lake City in the Territory of Utah, whereby it appears that in pursuance of said act of Congress

George Hardie

did on the twentieth day of October A. D. 1874, enter and pay for said mining claim or premises, being Mineral Entry No. 117, in the series of said Office, designated by the Surveyor General as Lot No. 53, embracing a portion of the unsurveyed public domain, in the West Mountain Mining District in the County of Salt Lake and Territory of Utah in the District of Lands subject to sale at Salt Lake City, embracing three (3) acres and sixty-seven hundredths (67/100) of an acre of land more or less, and according to the returns on file in the General Land Office, bounded, described and platted as follows, with magnetic variation at sixteen (16) degrees, thirty (30) minutes East, to wit:

Beginning at the southeasterly corner of the claim, Pine Post four (4) inches square marked "U. S. 53, No. 1," thence North sixty-five (65) degrees West two hundred (200) feet to corner No. 2, Pine Post four (4) inches square, marked "U. S. 53 No. 2"; thence North twenty-five (25) degrees east, four hundred and twelve (412) feet to intersection of northerly boundary of the survey made for the Grizzly Mining Claim twelve hundred (1200) feet to Corner No. 3, Pine Post four (4) inches square, marked "U. S. 53, No. 3"; thence South sixty-five (65) degrees East, two hundred (200) feet to corner No. 4, Pine Post four (4) inches square marked "U. S. 53, No. 4," thence South twenty-five (25) degrees west, four hundred and twenty-eight (428) feet to intersection of northerly boundary of the survey made for the Grizzly Mining Claim, eight hundred and forty (840) feet to intersection of southerly boundary of the survey made for said Grizzly Mining Claim; twelve hundred feet to the place of beginning containing three (3) acres, and sixty-seven hundredths (67/100) of an acre of land more or less, excepting and excluding however all that portion of the surface ground hereinbefore described which is embraced by the survey made for the Grizzly Mining Claim. From discovery shaft of said Northern Light Lode
48 United States Mineral Monument No. 1 bears South sixty-two (62) degrees fifteen (15) minutes East at the distance of eleven hundred and ninety-two (1192) feet, the Fairview discovery bears South fifty-nine (59) degrees thirty (30) minutes West, at the distance of one hundred and ninety-five (195) feet, and the Grizzly discovery bears South thirty-four (34) degrees twenty-seven (27) minutes West, at the distance of three hundred and two (302) feet; it being the express intent and meaning of these presents to convey to the grantee herein twelve hundred (1200) linear feet of the said Northern Light Lode, to wit, six hundred (600) linear feet northeasterly and six hundred (600) linear feet southwesterly from the

Discovery Shaft upon the said Northern Light Lode, as represented by yellow shading in the following plat.

[No plat on original. J. R. L., Clerk.]

Now Know Ye, that the United States of America, in consideration of the premises, and in conformity with said acts of Congress, Have given and granted and by these presents do give and grant, unto the said

George Hardie

and to his heirs and assigns the said mining premises hereinbefore described as Lot No. 53, embracing a portion of the unsurveyed public domain with the exclusive right of possession and enjoyment of all the land included within the exterior lines of said survey not herein expressly excepted from these presents, and of twelve hundred (1200) linear feet of the said Northern Light vein, lode, ledge, or deposit for the length hereinbefore described, throughout its entire depth, although it may enter the land adjoining, and also of all other veins, lodes, ledges or deposits throughout their entire depth, the tops or apexes of which lie inside the exterior boundary lines of said survey at the surface extended downward vertically although such veins, lodes, ledges or deposits in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said survey. Provided, that the right of possession hereby granted to such outside parts of said veins, lodes, ledges or deposits shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said survey at the surface, so continued in their own direction that such vertical planes will intersect such exterior parts of said veins, lodes, ledges, or deposits: And provided further, that nothing in this conveyance shall authorize the grantee herein, his heirs or assigns, to enter upon the surface of a mining claim owned or possessed by another: To Have and
49 To hold said mining premises, together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto belonging, unto the said

George Hardie

and to his heirs and assigns forever, subject nevertheless, to the following conditions and stipulations:

First. That the grant hereby made is restricted to the land hereinbefore described as Lot No. 53, with twelve hundred (1200) linear feet of the Northern Light vein, lode, ledge or deposit for the length aforesaid throughout its entire depth as aforesaid together with all other veins lodes, ledges or deposits throughout their entire depth as aforesaid, the tops or apexes of which lie inside of the exterior lines of said survey, as against all persons claiming under locations made upon such other veins, lodes, ledges or deposits subsequent to May 10, 1872; but subject to the right of other parties to follow any other vein or lode, with its dips angles and variations legally held under a location made prior to such date.

Second. That the premises hereby conveyed with the exception of

the surface, may be entered by the proprietor of any other vein, lode, ledge or deposit, the top or apex of which lies outside of the exterior limits of said survey, should the same in its downward course be found to penetrate, intersect, extend into or underlie the premises hereby granted, for the purpose of extracting and removing the ore from such other vein, lode, ledge or deposit.

Third. That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts.

Fourth. That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted involving easements, drainage, and other necessary means to its complete development.

50 In testimony whereof, I, Ulysses S. Grant, President of the United States of America, have caused these letters to be made Patent, and the seal of the General Land Office to be hereunto affixed.

Given under my hand at the City of Washington, the fifteenth day of May in the year of our Lord one thousand eight hundred and seventy five and of the Independence of the United States the ninety ninth.

By the President:

[L. S.]

U. S. GRANT,
By S. D. WILLIAMSON,
Secretary.
L. K. LIPPINCOTT,
Recorder of the General Land Office.

Recorded Vol. 15, pages 369–374.

128837

B

D. E. S.

4–205

J. A. D.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
WASHINGTON, D. C., *June* 20, 1902.

I, Binger Hermann, Commissioner of the General Land Office, do hereby certify that the annexed copy of Patent in favor of George Hardie founded on Salt Lake City Territory of Utah Mineral Entry No. 117 Patent No. 1346, Northern Light Lode is a true and literal exemplification from the record in this office.

In Testimony whereof, I have hereunto subscribed my name, and caused the Seal of this office to be affixed, at the City of Washington, on the day and year above written.

[SEAL.]

BINGER HERMANN,
Commissioner of General Land Office.

Filed in U. S. Circuit Court, District of Utah, Oct. 20, 1902. Jerold R. Letcher, Clerk.

Mr. SUTHERLAND: I next offer in evidence the abstract of a deed from George Hardie and wife to the United States Mining Company, the plaintiff in this suit, dated May 10th, 1899, the abstract in which it is found being certified by the Utah Trust & Savings Company, a corporation duly licensed to make abstracts. It purports to convey the Northern Light claim situated in West Mountain Mining District.

Said page of said abstract was marked "Exhibit B, J. W. C.," and was received in evidence.

51

EXHIBIT "B."

Deed Recorded
"P" 514.
Apr. 23–01.
4.00 P. M.
No. 146523

George Hardie
Jane B. Hardie, wife,
to
United States Mining Company,
a corporation.

MINING DEED
Dated May 19, 1899
Ackd. July 12, 1899*
Witnessed O. K.
Consideration $40,000.

CONVEYS the NORTHERN LIGHT, the GRIZZLY and the FAIRVIEW Mining Claims, West Mountain Mining District, Salt Lake County, Utah, and more fully described on the records of said Mining District.

*Before David M. Erskine, Jr., of Lake County, Illinois, does not state when his commission expires.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

52 Mr. SUTHERLAND: I next offer in evidence patent of the United States to George Hardie of the Fairview mining claim being lot No. 54, as shown on the large map on the black-board, bearing date February 23rd, 1875.

Mr. HILES: No objection.

Said patent was marked "Exhibit C, J. W. C." and was received in evidence.

Mr. SUTHERLAND: I next offer in evidence the same entry in the abstract which was read before, the same deed conveying the Fairview as well as the Northern Light.

The same was received in evidence (Exhibit B.)

EXHIBIT "C."

General Land Office
No. 1218.

Mineral Certificate
No. 118.

The United States of America to all to whom these presents shall come, Greeting:

Whereas, In pursuance of the act of Congress approved July twenty-six, eighteen hundred and sixty-six, entitled "An Act granting the right of way to ditch and canal owners over the public lands, and for other purposes," the Act amendatory thereof, approved July ninth, eighteen hundred and seventy; and the Act approved May tenth, eighteen hundred and seventy-two, entitled "An Act to promote the development of the mining resources of the United States," there have been deposited in the General Land Office of the United States the Plat and Field Notes of survey of the claim of George Hardie upon the Fairview Mine, accompanied by the Certificate of the Register of the Land Office at Salt Lake City, in the Territory of Utah, whereby it appears that in pursuance of said Acts of Congress George Hardie did, on the 20th day of October, A. D. 1874, enter and pay for said mining claim or premises, being Mineral Entry No. 118, in the series of said office, designated by the Surveyor General as Lot No. 54, embracing a portion of the unsurveyed public domain in the West Mountain Mining District, in the County of Salt Lake and Territory of Utah, in the District of Lands subject to sale at Salt Lake City, embracing two (2) acres and two hundredths (2/100) of an acre of land more or less, and, according to the returns on file in the General Land Office, bounded, described and platted as follows, with magnetic variation at sixteen (16) degrees, thirty (30) minutes East, to-wit:

53 Beginning at corner No. 1, a Pine Post 4x4 inches, marked "U. S. 54, No. 1" at the southeasterly corner of the claim; thence north thirty-six (36) degrees West one hundred and nineteen (119) feet to corner No. 2, a Pine Post 4x4 inches, marked "U. S. 54, No. 2;" thence North fifty-four (54) degrees East three hundred and seventy-seven (377) feet to corner No. 3, a Pine Post 4x4 inches, marked "U. S. 54, No. 3;" Thence north twenty-five (25) degrees east three hundred and seventy-one (371) feet to corner No. 4, a

Pine Post 4x4 inches, marked "U. S. 54, No. 4;" Thence South sixty five (65) degrees East, one hundred and eight (108) feet to corner No. 5, a Pine Post 4x4 inches, marked "U. S. 54 No. 5;" thence south twenty-five (25) degrees West, four hundred and twenty five (425) feet to corner No. 6, a Pine Post 4x4 inches marked "U. S. 54 No. 6;" thence South fifty-four (54) degrees West, three hundred and eighty (380) feet to the place of beginning, containing two (2) acres and two hundredths (2/100) of an acre of land, more or less, and embracing four hundred (400) linear feet northeasterly, and four hundred (400) linear feet southwesterly from Discovery Cut on said Fairview Mine. From the Discovery Cut an said Fairview Mine, U. S. Mineral Monument No. 1, bears South Sixty-nine (69) degrees, thirty-three (33) minutes East at the distance of thirteen hundred and five (1305) feet; Discovery of the Grizzly Mine bears South one (1) degree twenty five (25) minutes West at the distance of one hundred and fifty (150) feet; and the Tunnel bears North twenty-five (25) degrees East at the distance of three hundred and seventy-five (375) feet; as represented by yellow shading in the following plat.

[No plat on original.—J. R. L., Clerk.]

Now know ye, that the United States of America, in consideration of the premises, and in conformity with said acts of Congress, have given and granted, and by these presents do give and grant unto the said George Hardie and to his heirs and assigns, the said mining premises hereinbefore described as Lot No. 54, embracing a portion of the unsurveyed public domain, with the exclusive right of possession and enjoyment of all the land included within the exterior lines of said survey not herein expressly excepted from those presents and of eight hundred (800) linear feet of the said Fairview vein, lode, ledge or deposit for the length hereinbefore described through its entire depth, although it may enter the land adjoining and also of all other veins, lodes, ledges or deposits throughout their entire depth, the tops or apexes of which lie inside the exterior
54 boundary lines of said survey at the surface extended downward vertically, although such veins, lodes, ledges or deposits in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said survey: Provided, That the right of possession hereby granted to such outside parts of said veins, lodes, ledges or deposits, shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said survey at the surface, so continued in their own direction that such vertical planes will intersect such exter[illegible] parts of said veins, lodes, ledges, or deposits. And provided furth[illegible] That nothing in this conveyance shall authorize the grantee her[illegible] his heirs or assigns, to enter upon the surface of a mining claim owned or possessed by another: To have and to hold said mining premises, together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto belonging, unto the said George Hardie and to his heirs and assigns forever, subject nevertheless to the following conditions and stipulations:

First. That the grant hereby made is restricted to the land hereinbefore described as Lot No. 54, with eight hundred (800) linear feet of the Fairview vein, lode, ledge, or deposit, for the length aforesaid throughout its entire depth as aforesaid, together with all other veins, lodes, ledges, or deposits throughout their entire depth as aforesaid, the tops or apexes of which lie inside of the exterior lines of said survey as against all persons claiming under locations made upon such other veins, lodes, ledges, or deposits, subsequent to May 10, 1872; but subject to the right of other parties to follow any other vein or lode, with its dips, angles and variations legally held under a location made prior to such date.

Second. That the premises hereby conveyed, with the exception of the surface, may be entered by the proprietor of any other vein, lode, ledge, or deposit, the top or apex of which lies outside of the exterior limits of said survey, should the same in its downward course be found to penetrate, intersect, extend into or underlie the premises hereby granted, for the purpose of extracting and removing the ore from such other vein, lode, ledge, or deposit.

Third. That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts.

55 Fourth. That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted, involving easements, drainage, and other necessary means to its complete development.

In testimony whereof, I, Ulysses S. Grant, President of the United States of America, have caused these letters to be made Patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the twenty-third day of February in the year of our Lord one thousand eight hundred and seventy-five and of the Independence of the United States the ninety-ninth.

By the President:

[L. S.]

U. S. GRANT,
By S. D. WILLIAMSON,
Secretary.
EUGENE A. FISKE,
Act. Recorder of the General Land Office ad interim.

Recorded, Vol. 14, pages 161 to 166.

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DEPARTMENT OF THE INTERIOR.
GENERAL LAND OFFICE.
WASHINGTON, D. C., *June* 30, 1902.

I, Binger Hermann, Commissioner of the General Land Office, do hereby certify that the annexed copy of Patent in favor of George

Hardie founded on Salt Lake City Territory of Utah Mineral Entry No. 118 Patent No. 1218 Fairview Mine is a true and literal exemplification from the record in this office.

In testimony Whereof, I have hereunto subscribed my name and caused the seal of this office to be affixed, at the City of Washington, on the day and year above written.

[SEAL.] BINGER HERMANN,
Commissioner of General Land Office.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

Mr. SUTHERLAND: I offer in evidence next the patent of the United States to the Old Jordan and Galena Mining Company, which purports to convey the Jordan Extension lode mining claim, lot No. 423, bearing date February 8th, 1896.

No objection being made, said patent was received in evidence and marked "Exhibit D, J. W. C."

56 EXHIBIT "D"

General Land Office No. 26500 — Mineral Certificate No. 2056

The United States of America to all whom these Presents shall come —Greeting:

Whereas, In pursuance of the provisions of the Revised Statutes of the United States, Chapter Six, Title Thirty-two, and legislation supplemental thereto, there have been deposited in the General Land Office of the United States the Plat and Field Notes of survey and the Certificate No. 2056 of the Register of the Land Office at Salt Lake City, in the Territory of Utah, accompanied by other evidence whereby it appears that the Old Jordan and Galena Mining Company did, on the sixteenth day of October, A. D. 1895, duly enter and pay for that certain mining claim or premises, known as the Jordan Extension lode mining claim, designated by the Surveyor General as Lot No. 423, survey No. 387, embracing a portion of the unsurveyed public domain in the West Mountain Mining District, in the County of Salt Lake and Territory of Utah, in the District of Lands subject to sale at Salt Lake City, and bounded, described and platted as follows, with magnetic variation seventeen degrees east.

Beginning at corner No. 1, a post four inches square marked U. S. 423 P. 1, in mound of stones, from which the mouth of the Excellsior tunnel bears north fifty-five degrees and forty-five minutes east fifty feet distant, and U. S. mineral monument No. 1, bears south sixteen degrees and forty-four minutes east five hundred and fifty-two and seven tenths feet distant.

Thence, first course, north twelve degrees and thirty minutes west one hundred feet to discovery, also intersect the west side line of lot No. 366, the Excellsior lode claim, two hundred feet to corner No. 2.

Thence second course, south seventy-seven degrees and thirty

minutes west two hundred and ninety-five and seventy-three hundredths feet intersect the northeast end line of lot No. 52, the Grizzly lode claim, at north thirty-six degrees west ten feet from post No. 4 of said claim; three hundred and sixty-two and forty-nine hundredths feet intersect the east side line of lot No. 150, the Orphan Boy lode claim, at north eighteen degrees and forty-five minutes east three hundred and nine feet from post No. 3 of said claim; four hundred and forty-nine hundredths feet to corner No. 3.

Thence, third course, south forty-four degrees and twenty-seven minutes west two hundred and eighty and five-tenths feet
57 intersect the east side line of lot No. 67, the Ashland lode claim; three hundred and twelve feet intersect the south side line of said lot No. 52 at south fifty-four degrees west four hundred and three and seventy-five hundredths feet from post No. 4 of said claim; three hundred and twenty anad eighty-five hundredths feet intersect the south end line of said lot No. 150 at north seventy-one degrees and fifteen minutes west one hundred and seventy-one and fifty-seven hundredths feet from post No. 3 of said claim, five hundred and thirty-four and eighty-three hundredths feet to corner No. 4.

Thence, fourth course, south twelve degrees and thirty minutes east one hundred and ten and nine-tenths feet intersect the east side line of said lot No. 67; one hundred and nineteen and three-tenths feet intersect the north side line of lot No. 64, the Jordan lode claim, one hundred and sixty-five and four-tenths feet intersect the north side line of lot No. 55, the K ton lode claim, at north fifty-one degrees and thirty minutes east y-eight and seven-tenths feet from post No. 7 of said claim; two hundred and thirty-eight and six tenths feet to corner No. 5.

Thence, fifth course, north forty-four degrees and twenty-seven minutes east two hundred and eighteen and seventy-six hundredths feet intersect the north side line of said lot No. 64; five hundred and thirty-six and twenty-six hundredths feet intersect the north side line of said lot No. 55; six hundred and five and sixty-two hundredths feet to corner No. 6.

Thence, sixth course, north seventy-seven degrees and thirty minutes east nineteen and four tenths feet intersect the north side line of said lot No. 55 at south fifty-one degrees and thirty minutes west one hundred and sixty-eight and nine tenths feet from post No. 6 of said claim; one hundred and thirty three and five tenths feet intersect the east end line of said lot No. 55, at south fourteen degrees and thirty minutes west eighty-three and one tenth feet from post No. 6 of said claim; two hundred and thirty-seven and five hundredths feet intersect the west side line of said lot No. 366; three hundred and forty-one and fifteen hundredths feet to corner No. 1, the place of beginning. Expressly excepting and excluding from these presents all that portion of the ground hereinbefore described embraced in said mining claims or lots Nos. 52, 55, 64, 67, 150 and 366 and also all that portion of said Jordan Extension vein or lode and of all veins, lodes and ledges throughout their entire depth, the tops or apexes of which lie inside of such excluded ground; said lot No. 423 extending

nine hundred and forty-one and five thousandths feet in
58 length along said Jordan Extension vein or lode, the granted premises in said lot containing two acres and sixty-seven hundredths of an acre of land, more or less.

Now Know Ye, That there is therefore hereby Granted by the United States unto the said Old Jordan and Galena Mining Company and to its successors and assigns, the said mining companies hereinbefore described, and not expressly excepted from these presents, and all that portion of the said Jordan Extension vein, lode, or ledge, and of all other veins, lodes and ledges, throughout their entire depth, the tops or apexes of which lie inside of the surface boundary lines of said granted premises in said Lot No. 423 extended downward vertically, although such veins, lodes, or ledges in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said premises: Provided, That the right of possession to such outside parts of said veins, lodes, or ledges shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said Lot No. 423, so continued in their own direction that such planes will intesect such exterior parts of said veins, lodes, or ledges: And Provided Further, That nothing herein contained shall authorize the grantee herein to enter upon the surface of a claim owned or possessed by another.

To Have and to Hold said mining premises, together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto belonging unto the said grantee above named, and to its successors and assigns forever; subject nevertheless to the above mentioned and the following conditions and stipulations:

First. That the premises hereby granted, with the exception of the surface, may be entered by the proprietor of any other vein, lode or ledge, the top or apex of which lies outside of the boundary of said granted premises, should the same in its dip be found to penetrate, intersect, or extend into said premises, for the purpose of extracting and removing the ore from such other vein, lode, or ledge.

Second. That the premises hereby granted shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts. And there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States.

59 Third. That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted, involving easements, drainage, and other necessary means to its complete development.

In Testimony Whereof, I, Grover Cleveland, President of the United States of America, have caused these Letters to be made

Patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand at the City of Washington, the eighth day of February, in the year of our Lord one thousand eight hundred and ninety-six, and of the Independence of the United States the one hundred and twentieth.

[SEAL.] By the President:

GROVER CLEVELAND,
By M. McKEAN, *Secretary.*
L. Q. C. LAMAR,
Recorder of the General Land Office.

Recorded Vol. 276, Pages 11 to 15 inclusive.

Filed in U. S. Circuit Court, District of Utah, Oct. 20, 1902.
JERROLD R. LETCHER, *Clerk.*

Mr. SUTHERLAND: I next offer in evidence another entry in the abstract, certified to by the same company, No. 3, purporting to be a deed from the Old Jordan and Galena Mining Company, *et al.*, to Clarence A. Hight, bearing date February 29th, 1899, and which purports to convey among other claims the Jordan Extension mining claim, lot 423.

No objection being made, the same was received in evidence, and marked "Exhibit E, J. W. C."

EXHIBIT "E."

Deed recorded
"S" 1.
Apr. 12-99
5.00 P. M.
No. 127668

The Old Jordan and Galena Mining Company by A. F. Holden, President.*
Edward B. Wicks, unmarried
E. E. Rowe
Gertrude E. Rowe, wife, by Albert F. Holden.
Kate D. Holden, wife, By Robert Harkness, her attorney in fact.
Liberty E. Holden
Delia E. Holden, wife, by Albert F. Holden, their Attorney in fact,
to
Clarence A. Hight

MINING DEED (Bargain and Sale).
Dated Feb. 27, 1899
Ackd. Feb. 27, 1899
Witnessed O. K.
Consideration $1.00 et-
CONVEYS all right title and interest in and to the JORDAN Lode Mining Claim. Lot No. 64 of the official surveys of the United States, within the West Mountain Mining District, Salt Lake County, State of Utah,

the GALENA Lode Mining Claim, Lot No. 39 of said surveys, the EXCELSIOR Lode Mining Claim, Lot No. 366 of said surveys, the JORDAN EXTENSION Lode Mining Claim, Lot No. 423 of said surveys and the First SOUTH EXTENSION of THE GALENA Lode Mining Claim, Lot No. 364 of said surveys, all situated within the West Mountain Mining District, Salt Lake County, State of Utah.

(Also conveys other property).

* By authority of a resolution of its stockholders and another resolution of its Boar- of Directors.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

61 Mr. SUTHERLAND: And the entry following that, which purports to be the abstract of a deed from Clarence A. Hight and his wife to The United States Mining Company, the plaintiff, and purports to convey among other claims, the Jordan Extension Lode Mining claim, lot 423, which deed bears date April 4th, 1899.

No objection being made, the same was received in evidence, and marked "Exhibit F, J. W. C."

62

EXHIBIT "F."

Deed Recorded
"S" 14.
Apr. 12-99
5.00 P. M.
No. 127672

Clarence A. Hight
Emily L. C. Hight, wife,
to
United States Mining Company, a corporation
under the Laws of Maine.

MINING DEED.
Dated Apr. 4, 1899
Ackd. Apr. 4, 1899
Witnessed O. K.
Consideration $1.00 etc.
CONVEYS the JORDAN Lode Mining Claim, Lot No. 64 of the official surveys of the United States within said District, the Galena Lode Mining Claim, Lot No. 39 of said surveys, the Excelsior Lode Mining Claim, Lot No. 366 of said surveys, the JORDAN EXTENSION Lode Mining Claim, Lot No. 423 of said surveys, the FIRST SOUTH EXTENSION OF THE GALENA Lode Mining Claim, Lot No. 364 of said surveys. (Also other claims,) in West Mountain Mining District, Salt Lake County, State of Utah.

The intention being to convey hereby without reserve and absolutely all right, title and interest whatsoever acquired by first party by deed of the Old Jordan and Galena Mining Company and others, etc.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

63 Mr. SUTHERLAND: I next offer in evidence a certified copy of the location notice of the Grizzly lode by H. M. May, I. M. Merrill, William M. Johns, Hugh Campbell, George Crowley & A. G. Heaton, Tim S. Whitmore, each of them except May claiming 200 feet, and May being the discoverer claiming 200 feet in addition, making 400 for him of 1600 linear feet altogether, the location notice being dated June 7, 1870, and filed for record June 10th, 1870.

No objection being made, said certificate was received, and marked "Exhibit G, J. W. C."

EXHIBIT "G"

Grizzly Lode.

We the undersigned claim 200 each and 200 feet additional for Discovery on this vein or lode of mineral situated in a grove of trees above the West Jordan Shaft we claim all its dips spurs angles and off shoots and intend to work the same according to the West Mountain Mining laws for quartz said lode will be known as the Grizzly Lode 800 feet N. E. and 800 feet South West from point of discovery. Located Aug. 3d 1869 Relocated June 7th 1870. Filed for Record June 10th, 1870.

Names	N. East	
H. M. May	1 claim & Discovery	400 feet
I. N. Merrill		200 "
Wm. M. Johns		200 "
	South West	
Hugh Campbell		200 feet
George Crowley		200 "
A. D. Heaton		200 "
Tim S. Whitmore		200 "

Filed June 13th 1870 Recorded June 16th 1870. Bingham Canyon West Mountain Mining District.

I. N. MERRILL,
Dept. Recorder.

Certificate.

STATE OF UTAH, *County of Salt Lake, ss:*

I, Thomas Alston, County Recorder in and for said County, do hereby certify that the annexed instrument of writing is a full, true and correct copy of the Notice of Location of the Grizzly Lode Mining Claim, situate in the West Mountain Mining District, Salt Lake County, State of Utah, as the same appears in Book "D" of Locations, at page 200, records of said District or record, which said records, pursuant to an Act of the Legislative Assembly of Utah, are now in my lawful custody.

64 Witness my hand and Official Seal, at Salt Lake City, Utah, this eighteenth (18th) day of October, A. D. 1902.

[SEAL.] THOMAS ALSTON,
Recorder, Salt Lake County, Utah.
By A. E. CARR, *Deputy.*

Filed in U. S. Circuit Court, District of Utah, Oct. 20, 1902. Jerrold R. Letcher, Clerk.

Mr. SUTHERLAND: I next offer in evidence abstract of a deed from Isaac M. Merrill, Hugh Campbell, Heaton and William Johns to Henry M. May, dated April 18, 1873, which purports to convey 1200 feet of the lode.

No objection being made, said page of said abstract was received and marked "Exhibit H, J. W. C."

EXHIBIT "H."

Deed Recorded
"F" 77.
Apr. 26–73

Isaac N. Merrill
Hugh Campbell
George W. Crowley
A. D. Heaton
William M. Johns
to
Henry M. May

MINING DEED
Dated Apr. 18, 1873
Ackd. Apr. 18, 1873
Witnessed O. K.
Consideration $5,000.00
CONVEYS all the undivided interest of first parties in GRIZZLY Lode, in West Mountain Mining District, Salt Lake County, Utah.

Isaac N. Merrill, 200 ft., Hugh Campbell, 400 ft., W. M. Johns, 200 ft., A. D. Heaton, 200 ft., George W. Crowley, 200 ft., making in all 1200 ft. duly recorded to first parties.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

66 Mr. SUTHERLAND: I offer abstract of deed from May to Johns, which purports to convey the entire claim of 1600 feet of the Grizzly lode, bearing date April 21st, 1873.

There being no objection, the same was received in evidence and marked "Exhibit J, J. W. C."

EXHIBIT "J."

Deed Recorded
"F" 72.
Apr. 25–73
6.00 P. M.

Henry M. May
to
William M. Johns

MINING DEED
Dated Apr. 21, 1873
Ackd. Apr. 21, 1873
Witnessed O. K.
Consideration $5,000.00
CONVEYS an undivided interest,

consisting of about 1600 ft., the same being the entire location on that certain lode known as the GRIZZLY Lode, West Mountain Mining District, Salt Lake County, Utah.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

68 Mr. SUTHERLAND: I next offer abstract of deed from William M. Johns, to T. F. Tracy, which purports to convey the entire Grizzly lode consisting of 1600 feet, bearing date of May 2nd 1873.

There being no objection, the same was received in evidence and marked "Exhibit K, J. W. C."

EXHIBIT "K."

Deed Recorded
"F" 155
May 19–73
10.00 A. M.

William M. Johns
to
T. F. Tracy

MINING DEED
Dated May 2, 1873
Ackd. May 2, 1873
Witnessed O. K.
Consideration $50,000.00
CONVEYS an undivided
interest, consisting of 1600 ft., comprising entire location known and recorded as GRIZZLY Lode, situated in Bingham Cañon, West Mountain Mining District, Salt Lake County, Utah, (also other property).

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher Clerk.

70 Mr. SUTHERLAND: I next offer in evidence, abstract of deed from Theodore F. Tracy to George Hardie, bearing date May 17th, 1873, which purports to convey the entire Grizzly consisting of 1600 feet.

There being no objection, the same was received in evidence and marked "Exhibit L, J. W. C."

EXHIBIT "L."

Deed Recorded
"F" 156
May 19–73
10.00 A. M.

Theo. F. Tracy
to
George Hardie

MINING DEED
Dated May 17, 1873
Ackd. May 17, 1873
Witnessed O. K.
Consideration $80,000.00
CONVEYS 1600 ft. in

GRIZZLY Lode, located June 7, 1870, in West Mountain Mining District, Salt Lake County, Utah (together with other property).

Filed in U. S. Circuit Court, District of Utah. Oct. 20, '92. Jerrold R. Letcher, Clerk.

72 Mr. SUTHERLAND: I next offer in evidence abstract of deed from George Hardie and wife to the United States Mining Company the plaintiff, here, which purports to convey among other claims the Grizzly mining claim, situated in West Mountain Mining District, Salt Lake County, Utah, more fully described in the records of the mining district, which bears date May 19th, 1899.

There being no objection the same was received in evidence and marked "Exhibit M, J. W. C."

EXHIBIT "M."

Deed Recorded " P " 514. Apr. 23-01 4.00 P. M. No. 146523	George Hardie Jane B. Hardie, wife, to United States Mining Company, a corporation.	MINING DEED. Dated May 19, 1899 Ackd. July 12, 1899* Witnessed O. K. Consideration $40,000.

CONVEYS the NORTHERN LIGHT, the GRIZZLY and the FAIRVIEW Mining Claims, West Mountain Mining District, Salt Lake County, Utah, and more fully described on the records of said Mining District.

*Before David M. Erskine, Jr., of Lake County, Illinois, does not state when his commission expires.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher Clerk.

74 Mr. SUTHERLAND: I next offer in evidence abstract of certificate of labor made by A. P. Mayberry of labor performed for the year 1899 upon the Grizzly claim.

There being no objection, the same was received in evidence and Marked "Exhibit N, J. W. C."

Mr. SUTHERLAND: I also offer at the same time certificate sworn to December 29th, 1889 certifying that $100 worth of labor was performed on the Grizzly lode at the request of George Hardie, the owner of the claim, and that the actual amount paid for the labor was $500 for the purposes of holding such claim.

There being no objection, the same was received in evidence and marked "Exhibit O, J. W. C."

EXHIBIT "N & O."

Filed
Dec. 30–99
11.40 A. M.
No. 134392

A. P. Mayberry
to
Whom it May Concern

PROOF OF LABOR
Sworn to Dec. 29, 1899
That he directed 100 days
labor worth $100.00 between Sept. 1, 1899, and Dec. 28, 1899, on the Grizzly Lode Mining Claim, West Mountain Mining District, Salt Lake County, Utah. Said work was done at request of Geo. Hardie, owner of said claim, and actual amount paid for said labor and improvements was $500.00 and was paid by United States Mining Company, the lessee of the said Grizzly Lode Mining Claim for the purpose of holding said claim.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

76 Mr. SUTHERLAND: And also certificate marked Exhibit O', by A. P. Mayberry, sworn to December 29th, 1900, which certifies that the assessment labor for the year 1900 worth $116.18 was done upon the Grizzly claim by the United States Mining Company, the owner of the claim.

And there being no objection the same was received in evidence and marked "Exhibit O-1, J. W. C."

EXHIBIT "O'"

When and where recorded.
Filed
Dec. 31-00
11.55 A. M.
No. 14333.

A. P. Mayberry
to
Whom it May Concern

PROOF OF LABOR
Sworn to Dec. 29, 1900
That he as the Mine
Supt. of the United

States Mining Company, owners of the Grizzly Lode Mining Claim, situate in West Mountain Mining District, Salt Lake County, Utah, caused improvements and 37 days labor to be made on said claim between Sept. 1 and Sept. 31, 1900, worth $116.18, which was paid by the said owners for the purpose of holding the said claim for the year 1900.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

78 Mr. SUTHERLAND: And also Exhibit P, certificate by A. P. Mayberry sworn to December 30, 1901, certifying that the labor on the Grizzly lode for the year 1901 and the value of the improvements upon this and other claims amounting to $1304.16, which was paid by the United States Mining Company the owner of the claim.

EXHIBIT "P."

Filed
Dec. 30–01
2.43 P. M.
No. 153785

A. P. Mayberry, Supt.
to
Whom it May Concern.

PROOF OF LABOR
Sworn to Dec. 30, 1901,

That he as Mine Supt. of the United States Mining Company directed labor to be done on the Grizzly, Lot No. 52, Gurdon, Survey No. 4153, Gurdon Fraction, Walk In, Walk In No. 4, Fairview Lot No. 54, Northern Light, Lot No. 53, Hampton, and Flagstaff, Lot No. 149, and the Imp Lode, Consequent, and Plumed Knight Lode Mining Claims, West Mountain Mining District, Salt Lake County, Utah. Said work being done between Apr. 1, 1901, and Dec. 10, 1901, at request of said mining company, for purpose of performing the annual assessment work for 1901. That the value of improvements was $1304.16, which amount was paid by the United States Mining Company, owner of said claims.

Filed in U. S. Circuit Court, District of Utah. Oct. 20, 1902. Jerrold R. Letcher, Clerk.

80 BARNEY MCMANNON, a witness produced by the plaintiff, being first duly sworn, testified as follows:

Direct examination.

By Mr. SUTHERLAND:

Q. What is your full name?
A. Barney McMannon, sir.
Q. Where do you reside?
A. Salt Lake.
Q. Have you ever lived at Bingham?
A. Yes, sir. I lived there from—I lived there two years, from the fall of 1870 until 1873.
Q. Were you one of the original locators of the Northern Light?
A. Yes, sir.
Q. About what year did you locate that claim?
A. I think it was in 1871.
Q. In 1871?
A. Yes, sir.
Q. At that time did you know of a claim called the Grizzly?
A. Yes, sir.
Q. Where was that with reference to the Northern Light?
A. That was about two hundred feet south of the Northern Light and west.
Q. Southwest? Well, now you are speaking of some particular point on the Grizzly when you say it was two hundred feet south and west?
A. Well, from the location you go south. I never visited it, but I think it was about two hundred feet, and then it lay west.
Q. And that brought you to the location of the Grizzly?
A. That brought me to the Grizzly shaft.
Q. The Grizzly shaft?
A. Yes, sir.
Q. How deep was that shaft at that time?
A. Well, we used to go up for water to that shaft; there was water in the bottom and I never got to the bottom. I do not know how much water there was in it, but we used to get water there, and it was about twenty-five feet from the surface down to the water.
Q. What material was disclosed by the shaft?
A. Well, there was ledge matter; a little ore mixed with it.
Q. A little ore?
A. Yes.
Q. In the shaft?
A. What they took out on top in the shaft; there was a streak of ledge matter running down as far as we could get down.
Q. Running down the shaft?
A. Yes, sir.
Q. Did you ever point out that place to Mr. Smith, the United States surveyor?
A. Yes, sir; I was out there six weeks ago, or a little over, and pointed it out to him.
Q. Pointed it out at that time?

A. Yes, sir.

81 Q. Pointed out the same place?

A. The shaft was still there.

Q. As being the discovery shaft which was there when you first saw it?

A. Yes, sir.

Q. Do you know who the claimants of the Grizzly claim were at that time? Can you name some of them?

A. Henry May and Colonel Johns, Mr. Merrill, who used to be recorder in Bingham—they were; I don't know the others, if there was any others in it.

Q. You do not remember, if there were any others, who those were?

A. I don't know; I can't tell you.

Q. But you remember those?

A. I remember those.

Q. How long did you continue to know the Grizzly claim?

A. Well, about two years.

Q. And then, I understand, you left Bingham?

A. Then I left Bingham. Then I left Bingham after I sold out there in 1873 and left Bingham, and while I was working on the Northern Light I knew the Grizzly by that name, and I knew these men owned it, at least they told me so.

Mr. HILES: We have no cross-examination.

Mr. HILES: Counsel have offered and there has been admitted in evidence certain papers which they say are certified copies. We did not have time to examine them but we now find they are not copies of the originals. It appears upon their face that they have left out the plat which accompanies all patents and which ought to be here.

Mr. SUTHERLAND: Of course the original papers are not in our possession, and we have procured certified copies from the proper officers; but I do not understand that the plat is necessary to a patent. The description is given.

Mr. HILES: It is a matter of substance is the reason I call attention to it and goes to a very important point in the case. They have pleaded a survey here and which they will undoubtedly have testified to by which they have this Fairview claim shoved east here 800 feet, whereas the plat in the patent would show that this line here touches the western line of the Northern Light. Therefore I insist that they shall produce a copy with the plat and object to the certified copy of the Fairview patent which has been admitted in evidence because it appears upon its face that it is not a certified copy in that it does not contain the plat which is mentioned in the document and which is a part of the instrument.

But the Court overruled the objection at this time.

To which ruling defendants then and there excepted.

82 Mr. HILES: We make the same objection to the copy of the Northern Light, and we ask an exception to the admission of the Northern Light patent.

The COURT: Yes, sir.

J. FEWSON SMITH, a witness produced by plaintiff, being first duly sworn, testified as follows:

Direct examination.

By Mr. SUTHERLAND:

Q. Mr. Smith, state your full name.
A. Jewson Fewson Smith, Junior.
Q. What is your business?
A. Surveyor.
Q. How long have you followed that business?
A. Between 8 and 12 years.
Q. Between eight and twelve years?
A. Yes, sir.
Q. Have you followed the business of making mining surveys?
A. Yes, sir.
Q. Been a deputy mineral surveyor have you?
A. Yes, sir.
Q. How many years?
A. Oh, I don't know, between eight and twelve years; I do not remember the date of my appointment; it was about ten years ago, I think.
Q. Where have you followed your profession?
A. In Utah.
Q. In the various mining districts of the State?
A. Yes.
Q. How many years have you followed your business in Bingham mining district where these claims are located?
A. My first work done in Bingham some of it, was eight or ten years ago.
Q. In the West Mountain Mining District?
A. Yes
Q. Commonly called Bingham. Some of your first work was done there?
A. Yes, sir.
Q. And have you followed pretty continuously the practice of your profession since?
A. Yes, sir.
Q. You are in the employ of the plaintiff in this case?
A. At present, yes.
Q. How long have you been in its employ?
A. Ever since its organization, I have done work for them more or less.
Q. And you were in the employment of its predecessor?
A. Yes.
Q. For some years?
A. In the employment of the predecessor of the present company for the last eight of ten years.

83 Q. For how many years have you been familiar with the group of claims that belong to the United States Mining Company in West Mountain Mining District?

A. Well, about the same length of time, eight or ten years.

Q. And have you done their surveying during that time? the surveying of their claims?

A. Yes, sir.

Q. Have you located their claims upon the ground out there?

A. Yes, sir.

Q. Are you familiar with the claim called the Northern Light No. 53?

A. Yes.

Q. Have you located that upon the ground?

A. Yes, sir.

Q. From what data?

A. Existing patent corners, natural objects bearing points and the official records of surveys for patent.

Q. Did you have access to the original survey notes for patent, the original survey?

A. I did not make the official survey for patent.

Q. Now are you familiar with the Ashland claim?

A. Yes, sir.

Q. Have you located that upon the ground?

A. Yes.

Q. From what data did you locate that?

A. Why, I tied to the existing corners and reference objects.

Q. Did you have access to the survey notes of the Ashland?

A. Yes.

Q. Now what corners did you find upon the ground of the Ashland claim?

A. I found corners at about the points where the red circles are shown on this map representing the patent corners and monuments found in place. I found corners 2, 3 and 4 of the Ashland lot 67.

Q. When did you first find these corners?

A. Well, I cannot tell without reference to my notes.

Q. Well about how long ago?

A. About eight years ago at least.

Q. Could you determine whether or not they were in place, their original place?

A. I could. I would change that as to this Corner No. 3. I found 2 and 4 seven or eight years ago and 3 I located some two months ago.

Q. Two months ago. You found corner No. 2 in place. What was that corner No. 2?

A. It was an old hewed post 6 feet long by six inches in diameter, lying down, and marked W. C. to Corner No. 2 of the Ashland lot 67.

Q. How could you determine it was in its original place?

84 A. It had all the appearances of age, and the rock and sand in the mound about it was in place and apparently not disturbed much, being in the brush.

Q. Was the stump of it rotted?

A. Yes; I found the rotten stump still there.

Q. Were they both standing?

A. In that case I think the post had fallen.

Q. But you found the rotten stump of it in place?

A. Yes; I found the bottom of the post there.

Q. How about post No. 4?

A. I might state the same thing about that.

Q. That was in place?

A. In a little more exposed position but giving every evidence of being the original corner.

Q. Was that post standing?

A. I think the post was standing or leaning up at the time I first saw it but my handling of it caused it to fall over.

Q. You found it standing there in the mound of stones?

A. I found the stones about it and I made an examination and I found the old end there.

Q. Now post No. 2 when you found it some years ago, do I understand it was standing or had fallen?

A. In that case the post was lying down.

Q. You found the post there?

A. But the post had fallen down.

Q. In the place where you found it was a post in a mound of stones was there any brush about there?

A. Yes; and a good deal above it.

Q. When did you find post 3?

A. Two months ago or thereabouts.

Q. How did you determine that was post No. 3 of the Ashland?

A. Well, the post in that case was standng and bore all the marks of age. It was properly marked and surrounded by a mound of stones and the dirt of the country there, the dirt having silted around it, so that it appeared to have been there for a number of years at least.

Q. Did you locate the Ashland upon the ground?

A. At this time I located the Ashland and I tied to the Ashland corners of the surveyed boundaries.

Q. Located the line from post 2 to 4, did you?

A. Yes, sir.

Q. Now you say you located the Northern Light?

A. Yes, sir.

Q. Did you find any other reference objects by which you located the Northern Light upon the ground?

A. In locating the Northern Light I found a cut 96 feet long, about 25 feet wide and five to seven feet in depth at a point
85 which I had reason to believe was in close proximity of the neighborhood of the discovery.

Q. Now in locating the Ashland did you find any other reference object except the post which you have mentioned?

A. Yes, sir.

Q. What was the object that you found?

A. I found topographical features, and a cut and tunnel shown.

Q. You say they were reference objects?

A. They were objects called for in the official notes, the notes of the official survey for patent.

Q. Or anything else; did you find any other objects?
A. It was tied to the mineral monument.
Q. I call attention particularly to the Grizzly discovery?
A. Yes.
Q. Did you find that?
A. I found the Grizzly discovery.
Q. When if at all was that pointed out to you?
A. It was pointed out to me, well, about seven or eight years ago at the time of making the survey when I found these corners 2 and 4.
Q. Now has it been recently pointed out to you?
A. Quite recently.
Q. By whom?
A. A man named Barney McManamon.
Q. The witness last upon the stand?
A. Yes; he was on the stand this forenoon.
Q. And he pointed it out to you how long ago?
A. About a month or six weeks ago.
Q. And in locating the Ashland did you locate it with reference to that discovery point of the Grizzly?
A. I made a connection between the two yes.
Q. How did it agree as you found it upon the ground with the calls in the patent survey notes?
A. It agrees almost exactly.
Q. How did you locate the Northern Light upon the ground?
A. From Corner No. 4. I established corner No. 4 of it from corner No. 4 of the Ashland lot 67.
Q. How did corner No. 4 of the Ashland help you to locate the Northern Light, in what way?
A. The notes of the official survey of the Ashland refers to a direct connection between those two posts.
Q. What posts?
A. The two 4's of the two claims.
Q. Corner 4 of the Ashland and corner 4 of the Northern Light?
A. Yes, sir.
Q. You found post 4 of the Ashland in place and from that you located corner No. 4 of the Northern Light?
A. Yes, sir.
Q. Was there anything standing at that point of corner No. 4 of the Northern Light?
A. Yes; there was an old post lying there.
86 Q. And when did you first discover that old post?
A. Well, I do not remember. I expect I found that at the time I was looking up corner No. 4 of the Ashland and my attention has been particularly drawn to it within recent times.
Q. Could you determine from the old post itself whether or not it was corner No. 4 of the Northern Light?
A. I could not.
Q. What?
A. The post did not show any marks—well I could determine the tie was approximately right, that it was in approximately the position it should be with respect to the Ashland.

Q. How marked?

A. There were no marks on that post?

Q. No marks then or never had been?

A. I could not say; might have been sometime, but none showing then.

Q. What do you say as to the age of the post?

A. It was quite an old post.

Q. An old post. Now in running the boundary lines of the Northern Light did you find any other posts?

A. Not claiming to be corners of the Northern Light.

Q. What other reference objects did you find by which you were able to locate the Northern Light upon the ground except the Ashland No. 4 post?

A. The large open cut 96 feet in length, about 25 feet in width and five or ten feet in depth the discovery pit or shaft at what is called the discovery cut and a tunnel running in the direction of the shaft.

Q. In the places called for in the patent?

A. Approximately and these reference points were used in determining the position of the discovery also. The question of its location was influenced by the position of the pit and post claimed to have been found at the intersection of the Kempton line with the Northern Light and reported in the official notes of the survey returned for the Ashland No. 67, and I might add them also to the rest.

Q. In the notes of the Ashland survey you found a post called for where?

A. At the intersection of the Northern Light line with the Kempton line near corner No. 1 of the Northern Light.

Q. Did you find that post?

A. No, sir.

Q. Did you determine the location of it?

A. I did.

Q. How?

A. By checking up the notes of the Ashland survey.

Q. And you found taking that with the claims as laid down agreed with it?

A. Very approximately.

Q. Now anything else?

A. No; I don't recall anything else.

87 Q. Now how about mineral monument. In the Northern Light field notes they call for the Ashland tunnel, do they not?

A. Yes, sir.

Q. And where is that situated?

A. One of those two tunnels,—this tunnel I presume, (indicating)

Q. Did you tie to that in making your location?

A. Well, I did not tie it at the time of locating these boundaries; I did not at that time tie to these points. But I had tied to all of the points at some time.

Q. Does the location of the tunnel agree with the location as you found it upon the ground with reference to the Northern Light?

A. Well, approximately nearly.

Q. Approximately?

A. Approximately only.

Q. Do you call to mind any other reference objects?

A. Only the reference to the United States mineral monument No. 1.

Q. What did you find with reference to that?

A. I found the discovery of the claim as I located it there varies about three degrees in course and about 52 feet in distance from the purported connection, reported in the official return of that.

Q. What is the entire distance from the mineral monument to the discovery of the Northern Light as called for in the patent?

A. The distances called for in the patent notes should be 1192 feet.

Q. And you found a discrepancy of 52 feet?

A. Yes.

Q. Which way was the discrepancy?

A. The actual distance was shorter than it should have been.

Q. Was that 52 feet shorter?

A. Yes, shorter.

Q. So that if you take that alone where would the Northern Light be carried, which way?

A. 52 feet further to the west.

Q. Now do you find with reference to the Ashland any discrepancy in its ties to the United States Mineral monument?

A. Yes.

Q. What is that discrepancy?

A. There is a difference of 13 minutes in course and of 25 feet in distance.

Q. What is the length of the line?

A. The length of the line officially?

Q. Yes.

A. 1186 feet.

Q. So that if you take that alone it would carry the Ashland further to the north?

A. To the west about 25 feet.

Q. About 25 feet. You also located these other claims for the Kempton did you upon the ground?

A. Yes, sir.

Q. With reference to its tie to the United States mineral monument, did you find any discrepancy?

88 A. Yes. There is a difference of 25 minutes in the course and 46.8 in the distance.

Q. What is the length of the line?

A. The recorded length officially recorded is 975 feet.

Q. With reference to the Kempton that is?

A. Yes.

Q. Now as shown on the map you find two stakes of the Mountain Gem in place?

A. Yes.

Q. Did you tie that to the United States mineral monument in making your survey?

A. I had already tied corner No. 2 of that claim.

Q. Any discrepancy in the length of the line?

A. I have not made any computation there. I don't think there is. I know there is not more than a foot or two at that point.

Q. Now do you find any of these other claims that do not agree in position as you find them upon the ground to a call to the United States mineral monument?

A. None of them agree.

Q. None of them agree?

A. No, sir.

Q. What is the discrepancy in the Orphan Boy?

A. I have not connected the Orphan Boy.

Q. What is the discrepancy taking them up here as you have tied them—the Jordan Extension?

A. You want a report of the discrepancy of each claim?

Q. Yes.

A. Well, take the Jordan lot 64 there is a difference of 14 minutes in course and 12.5 feet in the distance.

Q. In what length of line?

A. A length of 1771 feet. In the case of the tie to corner No. 1 Jordan Extension lot 423 there is a difference of one degree and eight minutes in course and 7.1 feet only in distance in a distance of 545.6. The distances I am giving are the recorded distances. The tie of the Northern Light I have already given.

Q. Any others?

A. The tie to the discovery of the Grizzly lot No. 52, there is a difference of 25 minutes only in course and 26.5 in distance.

Q. How much?

A. 26.5 feet, no, that is 126.5.

Q. 126.5 feet?

A. Yes; that is right.

Q. And over what length of line?

A. A recorded length of 126.5.

Q. Now is that tied to that corner of the Grizzly?

A. That corner of the Grizzly will check with this here.

Q. Is there any discrepancy in the line?

A. There is no tie given, official tie to that corner.

Q. But you found corner No. 1 of the Grizzly still standing?

A. Still in place.

89 Q. Can you determine whether or not it is in its original place?

A. There is no question about that.

Q. How did you determine it is the Grizzly?

A. Well by its age and appearance and the locality and markings, properly marked ties with respect to the Neptune posts and its tie to the Grizzly discovery.

Q. So that you find that post of the Grizzly in place in the original place and when you come to measure the call for the United States mineral monument, you found it 126 feet out?

A. That is that is tied to the discovery point but it would be practically the same.

Q. 126 feet out?

A. Yes, sir.

Q. Moving it in which direction?

A. Throwing it up that way 126 feet.

Q. You mean north of west?

A. Westerly.

Q. Westerly? Tell me what other original monuments that you found upon the ground in making your survey?

A. I think they are all—here is the discovery of the Jordan lot 64 corner No. 3 of the Jordan Extension, lot 423.

Q. Find that in place?

A. Yes, sir.

Q. How did you determine it is the original post in place?

A. Well its position in relation to the adjacent patents and answering the description of the official marks as to markings and position.

Q. You think it would be in place?

A. Yes, sir; I think it is in place.

Q. What did you find at the discovery of the Jordan?

A. I found for the tie there, I found an iron pin.

Q. At the place called for at the discovery point?

A. Yes, sir.

Q. Now have you laid down the Northern Light claim upon this map in accordance with the data which you found upon the ground and have described and in its proper relation to the other claims that are laid upon the maps?

A. Well, it is not laid down with relation to anything except its individual proof, that is its actual position upon the ground has been determined without regard to any of the adjacent claims excepting this tie to the corner 2 of the Ashland lot 67.

Q. But you have laid it down with reference to these various objects you have described?

A. Yes, sir.

Q. As you found them upon the ground?

A. Yes, sir.

Q. Now I want to ask you what is the character of the country that you passed over from the United States mineral monument No. 1 to the westerly along these various lines, to these different claims you have mentioned.

90 A. It is very steep, broken, difficult to get over and much more so to measure over.

Q. How as to the undergrowth?

A. Well not a great deal of brush for the first half of the distance; the balance there is more.

Q. Were you acquainted with the country many years ago, seven or eight years ago?

A. Yes.

Q. How was it then; any different as to brush?

A. Not very much different.

Q. Is that discrepancy in distances unusual?
A. By no means.
Q. In lines of that length?
A. No, sir.
Q. Now you laid the Ashland claim down upon the map in accordance with these various objects you found upon the ground?
A. Yes, sir.
Q. State whether or not the Ashland and the Northern Light as laid down upon the map bear their proper relations to one another as shown by these various objects that you found upon the ground and these monuments?
A. They show their proper relation decidedly.
Q. Now from what data did you locate the Grizzly upon the ground?
A. From the official records, using the official records from the post No. 1 that I found in place.
Q. That claim has been surveyed for patent but not patented?
A. Not patented yet.
Q. Where did you get the survey notes?
A. In the office of the United States Surveyor general.
Q. Now with the exception of post No. 1 that you found did you find any reference objects upon the ground from which you were able to locate the Grizzly?
A. Yes, sir.
Q. What else?
A. The post at the Discovery point.
Q. You found that in its proper position on the ground?
A. Well what I think was its proper position.
Q. You say that Mr. McManamon pointed out to you the discovery point; how does that agree?
A. That agrees very closely to the position.
Q. Well, how closely?
A. Within eight or ten feet there.
Q. Did you find any other reference objects upon the ground?
A. As to the Grizzly?
Q. As to the Grizzly?
A. No others that I used.
Q. Is that Grizzly lode down upon this map correctly and in accordance with these reference objects as you found them upon the ground?
A. Yes, sir.
Q. Now, the Jordan Extension how did you locate that upon the ground?
A. I found the original post of corner No. 3 standing.
91 Q. Did you find any other reference objects?
A. I found none; I looked for none except the mineral monument.
Q. And that claim is laid down with reference to post No. 3 you found standing in place and correctly laid down?
A. Yes.

Q. And correctly put upon the map?

A. Yes.

Q. Now here about the Fairview; did you locate the Fairview?

A. The Fairview is located here; it is tied to corner No. 1 of the Grizzly lot 52.

Q. Describe what you found there?

A. I found corner No. 1 of the Grizzly lot 52 and I found a corner of the adjacent patent from which a tie had been given to this corner No. 3 of the Fairview lot 54 and combining the information I determined that to be the position of that.

Q. And located it with reference to corner No. 1 of the Grizzly?

A. It is located with reference to that.

Q. And located correctly as called for in the patent survey notes?

A. Yes, sir.

Q. What other point?

A. Using in connection with that the position that is reported in the survey of the claim called the Mountain Gem, I think, in which Mr. O. A. Palmer gives a connection to that.

Q. You mean this claim?

A. No; the Mountain Gem on the other side of the hill.

Q. And you found you had laid it down with reference to the call for that claim?

A. No; not exactly; in fact I don't know just how it does bear with regard to that but it lies there that way from this corner.

Q. Any other call or any other object that you could find?

A. Well, I have got the position of the discovery there, I think or at least what is claimed as the discovery cut but I have made no reference to that either I think.

Q. So that it is laid down with reference to it—

A. That point.

Q. That Corner of the Grizzly?

A. Yes.

Q. Mr. Smith have you been underground in these various claims you have described, that is the Northern Light, Jordan Extension, the Grizzly and the workings so far as they are within the boundaries of these claims?

A. Yes, sir.

Q. The map you have been referring to heretofore in your testimony is Exhibit Q?

A. Yes, sir; I think so.

Q. Now I call your attention to a map which will be marked Exhibit R, showing the same underground workings on these claims. Do you know where through these workings any ore bodies are disclosed underneath this Northern Light?

92 A. I know where the so-called ore bodies are disclosed.

Q. Show where they are on the map?

A. In the west of the Northern Light mine as I have it laid down here, between the green line S and extending southerly to the green line U. Some of them are to the west of the line 1/4 of the North Northern Light lot 53 and to the south of the green line marked S (f) and to the north of the green mark U.

Q. And shown by what if any levels there?

A. Shown well, on the purple, the orange, the brick red and also on the blue.

Q. Now are any ore bodies shown under the Jordan?

A. Yes; the so-called upper and lower stope.

Q. Anything under the Grizzly or would these be under the Grizzly?

A. Well the first described ore bodies so-called ore bodies would lie beneath he ground in conflict between the Grizzly and the Northern Light, yes, sir.

Q. And would they extend into the Northern Light beyond the side line of the Grizzly here?

A. Yes; they would, although I have limited the position by the letter U.

Q. Now in the Fairview workings, you haven't reached there any ore bodies disclosed underneath the Fairview?

A. There is ore there but as to its body I cannot say; there is ore in the face.

Q. There is ore in the face of the drift; of the drift which extends from the side line of the Fairview in the purple drift?

A. Yes, sir.

Q. How do you describe this body under the Jordan Extension?

A. I say it is called the lower stope in connection with the stope here.

Q. They show ore bodies underneath the Jordan Extension extended vertically down?

A. Yes, sir; Jordan Extension.

Cross-examination.

By Mr. Hiles:

Q. What works are represented on these maps?

A. Whose workings.

Q. Whose workings are represented on that map, whose underground workings?

A. They are the workings that had been done by orders of somebody not in the employ of the United States Mining Company.

Q. Well, the work that you have testified to has been done there not by the United States mining company?

A. Yes, sir.

93 Q. Do you know who the parties were who were in possession?

A. I know the parties doing the work were doing it under the direction of Colonel Wall.

Q. When did you first go in there to see them?

A. I cannot say that; at different times between now and 1899, I will state recently the works—I know that the work has been done by Col. Wall. At an earlier date it may have been done under the direction of a man by the name of Sampson.

Q. But for the year last past, do you know that Col. Wall has been there working in Northern Light ground?

A. Yes, sir.

Q. And many of these works are old workings?

A. Yes, sir.

Q. They were there when you first took employment with the predecessors in title of the United States Mining Company?

A. Some of them.

Q. And were beyond the northerly side line of the Kempton ground?

A. Yes, sir.

By Mr. SUTHERLAND:

Q. Grizzly side line?

A. Well the northwesterly side line.

Q. The claim lies more east and west than it does north and south?

A. Well at that point, its boundary follows my pointer.

Q. Do you know where the Ashland tunnel is on that map?

A. Yes.

Q. The lower tunnel?

A. Yes, sir.

Q. Point out the lower Ashland tunnel?

A. The yellow level is the first lower Ashland tunnel.

Q. This long purple line represents what is called the Neptune tunnel?

A. That is the Kempton lower tunnel.

Q. That is its portal down the hill to the south of the Mountain Gem?

A. Yes.

Q. It runs through the Mountain Gem and through the Kempton into the Jordan Extension?

A. Yes, sir.

Q. Who does that tunnel belong to?

A. I don't know.

Q. Is it a United States tunnel?

A. I don't know, I don't know.

Q. Has it been used by the United States mining Company?

A. The United States Mining Company have run into it and through it and made surveys at pleasure.

Q. They have gone through it upon the license of other people haven't they?

A. I don't know.

Q. You don't know?

A. I don't know. That is all I know about it.

Q. Don't you know it to be the fact?

A. Hearsay only.

94 Q. That that tunnel for many years has been used for the development of the Kempton mine, what is called the Kempton has it not?

A. It has.

Q. And these workings which are represented on this map show the underground workings of the Kempton mine as they have existed for many years, 25 or 30 years; isn't that the fact?

A. Not all of them, no, sir.
Q. Some of them are early workings?
A. Some of them.
Q. And some of them recently?
A. Yes, sir.
Q. They have been extended in the last year or two a great deal?
A. They have.
Q. By whom have they been extended?
A. Under the direction as I understand of a man named Sampson and later Mr. Wall.
Q. So that none of these workings here is the work of the United States Mining Company, so far as you know?
A. It has not been done by order of the United States Mining Company, so far as I know.

Objected to by counsel for plaintiff as not being cross-examination. But the Court overruled the objection.

Q. Now you remember about the first of the year Col. Wall and these other people were in there at that time, don't you?
A. Yes.
Q. Now calling your attention to Exhibit Q, in making your location and survey of the Ashland claim upon this plat you started at what you call post No. 2 of the Ashland lot 67?
A. Yes.
Q. That is true, is it?
A. Yes, sir.
Q. You say you found a stake there; what was it marked?
A. It was marked W. C. U. S. L. 67 P. 4, I think, or post 2.
Q. Post 2?
A. Or post 2. It was marked a witness corner, W. C. U. S. L. 67.
Q. L. U. S. 67?
A. Yes.
Q. Who was with you when you made that survey?
A. I think a man by the name of Pels and a man named Peterson.
Q. Did you make a survey recently with a man named Jessen?
A. Yes, sir.
Q. Didn't you at that time start from this point, post No. 2?
A. Yes, sir.
Q. With Mr. Jessen?
A. Yes, sir.
Q. You ran to post No. 3 at that time?
A. Yes, sir.
Q. Now then did you not follow the calls of the patent 1173.7 to a point nearly to post 4?
95 A. We followed the patent calls in running around there?
A. Yes, sir.
Q. You followed the patent calls to that point 1173.7 from post No. 3 running north 28° east?
A. Yes—I do not remember as to those exact distances, or those courses but we took the patent corner and run a line out to find this corner and look at this corner.

Q. When you got here to this point, did you find the post at that point?

A. No; we did not.

Q. You did not find it there?

A. No; in running on that line we did not find that post.

Q. You did not?

A. No.

Q. The fact is that you reached a point 14 feet or about—I am speaking of about, not exactly—about 14 feet west of that point, did you not?

A. Well, no, in that line we run up to a point some distance back of the post itself; we did not terminate at the post.

Q. Did you terminate at the point west of the post?

A. Well, I don't know whether we terminated west of that post or not. We terminated west of the point that we found at that time.

Q. When you got to that point where your survey terminated there did you find this post that you have spoken about lying upon the ground about 14 feet east of the point where you came to?

A. We found a post there to which we made a tie.

Q. Was not that lying down upon the ground?

A. Yes; the post was lying upon the ground.

Q. And was it not about 14 feet east of the point that you have established at this corner?

A. I don't know really the point we stopped at there; between 40 to 50 feet south of that corner and it was a little—let us see—it would be almost due south of this.

Q. Well, it would be west too, would it not?

A. No, sir; I don't think it was at all west, the line we run——

Q. Now you ran this distance on this course. Now tell me where you landed when you quit?

A. We ran the recorded course a distance from that corner and stopped at a point opposite to this post 4 and made a tie to that. We found it between ten and twenty feet—I forget the exact distance to the east of us, I think it was east, at this corner of the Northern Light, lot 53.

Q. You found this post lying upon the ground east?

A. No, sir.

Q. Well?

A. We did not find it that day at all, that is corner 4 of the Ashland, and corner 4 of the Ashland when I found it was lying down, but when I went up to the office and checked the line I found
96 a discrepancy, that it was not the post I thought we had run to and then I went back again to find the post and found it lying down.

Q. Answer my question. Maybe I am dull of comprehension but is it not the fact that when you first ran this line on the calls of the patent, you came out here at a point either northwest or west or to the southwest of the point that you have established there?

A. No, sir.

Q. —while the monument you found of 4 67, as established by you on the map, as it has been established——

87

A. I see what your drift is. No; we terminated about 50 feet, almost due south from that post marked 4 of the Ashland 67.

Q. And no distance west?

A. We did not. Well, I cannot tell without figuring it, but we did not run the recorded distance from here to that corner in order to terminate at that point.

Q. Do you say that you were not 114 feet west when you terminated your line, west of where that point is located?

A. Yes, decidedly; I was west of that point 4 of Northern Light lot 53.

Q. You say decidedly you were?

A. West of that Corner No. 4 of lot 53.

Q. As it is now located?

A. As it is now located.

Q. How many feet?

A. Somewheres between ten and twenty feet. I did not measure it. I was not interested in that.

Q. Now Mr. Smith in making the surveys of the ground of different mining claims, the United States mineral post or monument is a permanent monument is it not?

A. Yes.

Q. In making surveys according to the calls of a patent, why do you go to some other point instead of this point in order to make it your initial point?

A. Because custom and the law has been to observe monuments on the ground regardless of courses and distances.

Q. Regardless of permanent monuments?

A. Permanent monuments are all considered ahead of the recorded distances.

Q. Is this a permanent monument?

A. Yes, sir.

Q. Why do you go to the other monuments instead of this one when you are making surveys and laying down claims according to the calls of the patent?

A. It is not usual to ignore four or five calls for the sake of one, especially where a long distance is in question.

Q. Have you seen the recent regulations of the Surveyor General on that point?

A. Yes, sir.

Q. What do they say?

A. They require us to misrepresent the facts in order to ultimately straighten out records.

97 Q. Misrepresent facts in order to straighten out records, to make a record of your own?

A. The idea is to start now at the mineral monument and take the patent calls for the entire thing.

Q. Do you find an old stake up here without any marking on it?

A. No, sir. I found the stake properly marked if that is the one you pointed to.

Q. What did you find marked upon it?

A. I found a W. C. to the post, number and the lot number at the time of tying to it seven or eight years ago, and it is there still.

Q. Where was the post that you surveyed from which had no mark upon it?

A. That I surveyed from?

Q. Yes; which you testified to?

A. Well, the post that I say was not marked was this corner No. 4 Northern Light and the post stands about where that should be within a few feet.

Q. Would you take that post lying on the ground as having as much verity and as being as good a guide to the surveyor as the permanent monument here?

A. I ignored the stake that I found at that point.

Q. You did?

A. Yes, sir.

(By Mr. DICKSON:)

Q. You are speaking now of the Northern Light?

A. Of the corner No. 4 of the Northern Light, lot 53.

Q. Explain how it is that in this plat you have platted the Northern Light as being 52 feet east of where the patent calls for it as it is referred to and measured to the permanent United States mineral monument?

A. I accept the verity of ties close by instead of those remotely situated.

Q. In that you have got all these claims further east and south than the calls of the patent demand, is that so?

A. No, sir.

Q. Well, this Northern Light is 52 feet, you say?

A. Yes.

Q. How much further south and east is the Fairview?

A. I have not figured the Fairview connection.

Q. Is it not a fact Mr. Smith that the Fairview claim as it is patented does not overlap the Northern Light at all?

A. As it is patented the description shows that it does not lap on the Northern Light.

Q. How much difference?

A. In the neighborhood of about 70 or 80 feet.

Q. 70 or 80 feet you have overlapped the Fairview on the Northern Light when the patent does not make any overlapping at all; is not that the fact?

98 A. The patent is issued on the assumption that the courses and distances reported between the discoveries of these two claims is correct. By examination on the ground I found that that is not correct and consequently finding the real monuments I have laid out the ground as it really has been patented.

Q. The patent does not make any exclusion or exception of the Northern Light from the Fairview or the Fairview from the Northern Light does it?

A. That is true.

Q. Wherever there is any conflict do not patents expressly except the conflicting part?

A. If the survey is accurate enough to know there is any conflict.

Q. So that the patent in this case makes no exclusion of the Fairview from the Northern Light or the Northern Light from the Fairview and there is no conflict whatever in the patents. Is not that so?

A. The patent represents the two southeasterly lines to be identical with the Grizzly and Northern Light not to be in conflict.

Q. That is what I thought. Now if you would tie all these claims to this mineral monument you would get a plat of all of them in accordance with the calls of the several patents, would you not?

A. No, sir.

Q. You would not? Where would you differ?

A. I would differ in every instance where the recorded distances are varying from the actual distances. In other words the connections between some of these claims are consistent and those claims that are consistent would check out but those that are not consistent with them would not check out.

Q. According to that statement then your survey differs from the Government survey when the Government parted with its title to these parties; is that true?

A. Well, the way you put it it is true; it ain't correct though.

Redirect examination.

By Mr. SUTHERLAND:

Q. Now Mr. Smith you did not undertake to place the mineral monument upon the map in any other place than where you found it upon the ground?

A. I did not.

Q. And you assume the mineral monument to be in place?

A. Yes.

Q. But what you assume is that the course and distance from that mineral monument to another point that you find upon the ground is wrong because you measured the distance between the two points and you find it to be the fact that it is wrong upon the ground?

A. Exactly so.

99 Q. Then as I understand you you take the monuments that were originally put there to mark the location of these claims in preference to the course and distance which is given from the mineral monument?

A. That is right.

Q. And that is all you do?

A. Yes.

Q. In doing that has your survey differed from the Government survey?

A. Not at all.

Q. When the deputy mineral surveyor surveyed the Ashland for instance he put this stake at No. 2 and at No. 4 in the places where they are now shown upon the ground?

A. He did.

Q. But your survey implies that in measuring from the Mineral

monument to these stakes or to the discovery point that he made a mistake in his distance?

A. That is correct.

Q. In that sense you prefer the stakes standing upon the ground in place of the distances which he gave?

A. Reports.

Q. Reports in his survey notes?

A. Yes; that is the fact.

Q. Now you spoke of finding this post 4 of the Ashland upon the ground and that I understand you was when you were there with Mr. Jessen?

A. Yes, sir.

Q. Did I understand you to say that is when you were there seven or eight years ago you found it standing in place?

A. That is my recollection.

Q. And afterwards had fallen down?

A. Yes, sir.

Q. Did you find the mound of stones in which the post originally stood when you were there with Mr. Jessen?

A. Yes; the mound is still there.

Q. And the post was in that mound of stones?

A. Yes.

Q. And you found that in place?

A. The post was in that mound of stones when I went to it the first time. The post is now lying down but the mound still remains.

Q. The mound of stones is still there?

A. Yes, sir.

Q. And in the same place where you found it seven or eight years ago with the post in it?

A. Yes, sir.

Q. And when you say you ran this line from post No. 3 of the Ashland to post No. 4 did you mean to tell counsel that you came out 14 feet west of post No. 4 of the Ashland or west of post No. 4 of the Northern Light?

A. Well, I think I made it clear that it was west of the post of the Northern Light.

Q. Of the Northern Light?

A. Yes, sir; it was.

Q. The distance which was called for did not bring you as far north as post No. 4?

A. We did not run the patent call there; we run the line to connect with this post, and by mistake stopped at this one in the hurry to get dinner and quit then and afterwards I found out our error. I do not remember what distance we run but we did run the called course.

Q. Is the distance between post 3 and 4 as you have stated it here?

A. It is.

Q. What it is?

A. 1173.7 feet.

Q. Is that the distance called for in the patent notes?

A. No, sir.
Q. What is the distance?
A. Somewhere in the neighborhood of forty feet in excess of that.
Q. Still beyond that?
A. Yes, sir.
Q. So that you shortened that distance because you found that post in place upon the ground?
A. Yes, sir.
Q. When was it that you and Mr. Jessen were up there making this survey about?
A. Between one and two months ago I do not remember the date.
Q. Just step to the map. The line which ties the discovery point of the Northern Light to the United States mineral monument is described as being 1140.6 feet is it?
A. No: that is the actual distance; what I read was the reported distance. 1140.6 is the actual distance; what I read is the recorded distance.
Q. The recorded distance would take us 52 feet which way?
A. Why the recorded distance would throw the discovery 52 feet further to the east.
Q. Further this way?
A. To the east, yes.
Q. Now let me see if I understand you. If you take that course and distance from the United States Mineral monument it would bring the Northern Light in this direction would it?
A. From the monument when you run the call out it would throw the Northern Light to the west.
Q. In this direction?
A. Yes, sir.
Q. 52 feet further in that direction?
A. Correct.
Q. Is the recorded distance shorter or longer than the actual distance?
A. Longer invariably.
Q. Now if that is so it would bring the Northern Light this way?
A. No; if you leave the monument there and run out a longer distance it would throw it away further.
Q. Taking the actual distance where would it be?
A. Right where I have got it, bringing it 52 feet nearer to the monument than it is recorded to have been near it.
Q. That is the same way with the others?
A. Same way with the others, in other words you move them bodily from the point of the monument or the monument bodily away from the claims.
101 Q. You move the Northern Light 52 feet in that direction, the Grizzly 126, if you take this alone, and the Fairview is not tied, and the Ashland 25 feet the same way?
A. Yes, sir.
Q. And then none of the claims would actually agree with the posts which you actually found upon the ground?
A. Would not agree with anything.

Q. And would not agree with the discovery shafts?
A. No, sir.
Q. And not agree with the openings found upon the ground? And not agree with the Ashland tunnel or any of those reference objects which you found actually upon the ground?
A. With none of them.
Q. That would be the fact?
A. Correct.
Q. How is the distance measured in surveying,—what instrument?
A. It is measured by a steel tape, taking slope angles and very carefuly measuring the distances. Originally it was measured with a chain and sometimes is recorded in chains.
Q. These surveys were originally made how many years ago?
A. In 1873 and 1874.
Q. And at that time they were measuring with chains?
A. Sometimes; I cannot say that those were.
Q. Do you know what the habit was in that method of surveying?
A. They measured recklessly.
Q. Whether they accounted for their slopes and angles?
A. They attemped to, for in that case the slope would make an error much greater than if they had not considered it.
Q. Now you have had a good deal of experience in these mining districts and in others in checking up courses and distances from United States mineral monuments, haven't you?
A. Yes.
Q. In your experience do you find these discrepancies to be unusual?
A. With the exception of the Grizzly tie, it is a remarkably close joining of a group of claims.
Q. As compared with the old surveys?
A. The old surveys yes.

Cross-examination.

By Mr. Hiles:

Q. Do you know how many different surveyors were used in making the patent surveys for these various claims?
A. Well, I don't know how many of them there were, at least three in these early surveys; at least that. I do not know how many.
Q. You know there was more than one man?
A. Yes, sir.
102 Q. And the fact is that they all made a mistake and you are right, is it?
A. No, sir; I claim that they all did fairly good work and that we are both right.
Q. Both right?
A. Well, we are pretty close in the general surveying of the system.
Q. Do you think that 52 feet is reasonably accurate surveying for a mining claim where there are adjoining mining claims?

A. It is a very close connection considering the point at which the survey was made the instruments they had to make it with and allowances at the office at the time.

Q. The carrying of the east line of the Northern Light into the Ashland ground makes a greater conflict with the Ashland than otherwise would be under the patent calls?

A. It is not carried into the Ashland ground.

Q. Well, carried towards the Ashland ground?

A. You mean by using different ties?

Q. Yes.

A. Yes, sir.

Q. Makes a greater area in conflict in favor of the Northern Light does it not, your survey and the patent survey?

Mr. DICKSON: Do you mean by the patent survey the calls of the mineral monument alone?

Mr. HILES: I mean the patent survey.

WITNESS: Why the fact is shown on that map, a conflict in the patent. No, sir; it does not vary materially, do not materially vary; they are pretty close.

Q. How many feet of difference?

A. You mean in feet?

Q. Yes.

A. Well, there is not at this end, I think it is within a foot or two and at this end the conflict with the Ashland won't be more than a few feet, ten feet.

Q. Ten feet?

A. Not more than ten feet; that is my recollection of it.

Redirect examination.

By Mr. SUTHERLAND:

Q. I understand you Mr. Smith if you take the Land Office plats the survey notes they will agree with your platting here as to the relative position of these claims within two or three feet of this end and ten feet at this end?

A. Less than five for the east line.

Q. Which way would it make the conflict area, more or less?

A. It would make it a trifle less; a trifle to the west.

Q. How is it as to the Kempton?

103 A. Well, that is materially different area; there it is materially more.

Q. How many feet more?

A. All the way from 30 to 70; I cannot tell you specifically without reference to my plat.

Q. In favor of the claims of the United States Mining Company?

A. No—you mean the present position would be in their favor?

Q. Yes?

A. Yes; decidedly.

Q. Decidedly in their favor?

A. Yes, sir.

Cross-examination.

By Mr. HILES:

Q. Did you and Mr. Jessen in making your joint survey disagree as to the location of the Kempton?

A. Not as to the position of the surface boundaries, I think. I think we agree as to that; we made the joint survey to establish that.

Q. Have you been in the practice generally, general practice, of your profession as a surveyor all these years, as well as being in the employ of the United States Mining Company?

A. Well, I have worked for them and others; I work by the day and I have worked at the business continually since I was appointed deputy eight or ten years ago.

Q. You have been and are now in the general practice of your profession?

A. Yes, sir.

ALBERT F. HOLDEN, a witness produced by plaintiff, being first duly sworn, testified as follows:

Direct examination.

By Mr. SUTHERLAND:

Q. State your full name?

A. Albert F. Holden.

Q. You are the managing director of the United States Mining Company?

A. I am.

Q. In this State. Are you acquainted with the Grizzly mining claim?

A. I am.

Q. How long have you known it?

A. For 18 or 20 years.

Q. And been familiar with its location upon the ground during all that time?

A. I have.

Q. Do you know its discovery point, or its discovery shaft?

A. I do.

Q. Do you know during that time who if anybody has been working upon it from time to time?

A. Various parties leasing from the owners. I do not recollect that the original owners have ever worked it themselves, but there have been lessors there almost continuously.

104 Q. During all the time that you have owned it?

A. Yes, sir.

Q. Do you know whether or not there has been work done upon that claim each and every year since you have known it?

A. There has been work done every year since I have known it—I won't say since I have known the claim but since 1884. I knew it before that. I am not familiar with the work before that. Since 1884 there has been work done upon that claim every year.

Q. As I understand you by leasers?

A. I understand they were leasing. There were men working there and I believe them to have been leasing from Hardy and others.

Q. When did the United States Mining Company come into the possession of the claim?

A. I think it is a little over a year ago as owners; they had a lease and bond on it I think it was 2 years previously.

Q. That would be for three years?

A. About three years.

Q. Did the United States Mining Company come into the possession of that under the lease and bond?

A. They did.

Q. And continued in the possession under the deed which they had?

A. They did.

Q. From Mr. Hardy?

A. They did.

Q. State whether or not the United States Mining Company has been working it since they have been in the possession of it?

A. They have.

Q. Are you familiar with the ore bodies underneath the surface of the Northern Light, as shown upon Exhibit R?

A. I am.

Q. And underneath the surface of the Jordan Extension lot 423?

A. I am.

Q. And whatever there may be under the Fairview?

A. There are ore bodies underneath the Fairview but not shown on that map.

Q. And underneath the Grizzly?

A. Yes, sir.

Q. Who if anybody has been working upon those ore bodies within the last year?

A. The ore bodies on this map shown from the purple level up to the green level have been worked, a portion of those workings have been run by Col. Wall and his associates.

Q. During the last year?

A. During the last year.

Q. And what have they done in the way of extracting ore?

A. They were extracting ore and shipping it.

Q. In what quantities?

A. In considerable quantities; I think there is about a thousand tons all told probably.

105 Q. A large quantity?

A. Yes.

Q. That they took out and shipped?

A. Yes, sir.

Q. Prior to the beginning of this suit?

A. Prior to the beginning of this suit.

Q. And would that be so with reference to the ore bodies in the Jordan Extension?

A. There was some ore taken out by Col. Wall altogether; he

took some; and there was other leasers of the Kempton property took other ores.

Q. And would that be so also with reference to the ore bodies that extend beyond the south side line of the Grizzly into the Northern Light?

A. Yes, sir. I am not sure that there has been any ore or very little ore taken—I think most of the work is old work.

Q. There appears to be an upraise here; is that in ore?

A. There is ore there.

Q. Leading from the green level into this triangular piece of the Northern Light?

A. Yes, sir.

Q. There is ore there?

A. There is.

Q. Do you know whether or not at the time this suit was brought they were working upon those ore bodies, taking out ore?

A. They were.

Cross-examination.

By Mr. HILES:

Q. These workings are all Kempton workings that are projected upon that map are existing underground workings?

A. Made by the Kempton people, or owned by them?

Q. Yes; and they extend from the surface of the earth down to the lowest level, do they not?

A. Yes; there are sections between the surface and the lowest level.

Redirect examination.

By Mr. SUTHERLAND:

Q. When did his work that you have been speaking of begin the last time?

A. It began in various—there is considerable work here that has been done within the last three years by Sampson and others, who were leasers from the Kempton people and a portion of it has been done by Col. Wall and a portion of it was old work that has been there many years.

Q. Within what period has that work been done?

A. Which work?

Q. This last work?

A. Within a year; Col. Wall's work has been done within a year and embraces nearly all if not all of the work that is under the Northern Light and the Grizzly.

106 Q. Prior to that you say that Sampson did some work where?

A. Sampson did some work partly under the Jordan Extension and partly under the Kempton.

Q. But did not extend out under the Northern Light?

A. Did not extend out under the Northern Light.

Q. And prior to that time when was the last work done?

A. There have been some leasers off and on, I cannot recollect when the work was done in the Ashland tunnel, the yellow tunnel to the left of the map.

Q. Reaching out as far as the Northern Light?

A. No; I don't think it reached out to this ore body.

Q. Well, prior to this work of Sampson's, when was the last work done underneath any of these claims?

A. Oh, it was many years ago.

Q. Many years ago?

A. Yes, sir.

Q. Outside of these workings?

A. That is, as far as I know there have been no workings under them for many years so far as I know.

Q. The old workings would be old work?

A. They were old work.

Q. Many years ago? Now you spoke about there being Kempton workings. Is this Neptune Kempton tunnel here a Kempton working owned by the Kempton?

A. No; that is owned by the United States Mining Company.

Q. Where did they begin on that?

A. There has been ore shipped from the mouth right in as far as the southeasterly side lines of the Kempton.

Q. Has it been in the possession of the United States mining company?

A. Been in the possession of the United States Mining Company and its predecessors, the Old Jordan and Galena and the Old Jordan Mining & Milling Company, the other company.

Cross-examination.

By Mr. HILES:

Q. Why, Mr. Holden when was that Neptune tunnel located, by whom?

A. The tunnel was located by the owners of the Neptune. I forget their names at the present moment; in 1871.

Q. And subsequently the fact is that the Neptune became the Kempton.

A. They were practically identical claims; the Neptune was abandoned practically.

Q. Is it not the fact Mr. Holden that this Neptune tunnel was located in 1873 for the purpose as expressed in the notice of developing the Neptune lode; don't you know that was expressly stated?

107 A. That was expressed in the location notice.

Q. Is it not a fact that the people who held the Kempton, have used that tunnel nearly thirty years?

A. No, sir; not quite. I have been in possession of,—the Old Jordan Mining and Milling Company and the Old Jordan and Galena Company, and the United States Mining Company have been in the exclusive possession since 1884 of that tunnel.

Q. You blew it up with dynamite sometime ago, did you not?

A. Yes; a portion of t.

Q. What did you do that for?

A. To prevent trespass by men who were wrongfully there and who refused to stop.

Q. Do you say you own that tunnel because it runs through Mountain Gem ground?

A. Because it was abandoned and we have pushed it under another claim called the Excelsior and Mountain Gem and Jordan.

Q. Did you patent the tunnel site?

A. No, sir; we covered the mouth of the tunnel at the surface by our claims.

Q. Did you patent the tunnel site?

A. Oh, no; the tunnel site was abandoned.

Q. When was it abandoned?

A. I cannot say, but from 1884 down to the present time there was no work done in it and I have been in the possession of it.

Q. You think you have been in the possession of it?

A. I know it; I have had charge of it.

Q. Who has been working through that tunnel in making these workings; anybody?

A. In what period.

Q. Any period?

A. I don't know when all the works were made. The first workings were made—they were there probably many years before I was acquainted with the tunnel

Q. Why Mr. Holden all these underground workings here have been made through this tunnel, this Neptune tunnel?

A. All of them, no, sir.

Q. Then through what other opening?

A. Nearly all the workings shown on that map and the old workings were made through three incline shafts only one of which is shown here, and they were there when I first knew the Neptune-Kemption ground. Three inclines show coming to the surface. There was a hoisting works upon the ground when I first saw it, at least there was some building there; but much if not the major portion of that work was done through the hoisting works.

Q. Colonel Wall has been using that tunnel has he not?

A. Lately.

108 Q. How lately?

A. About a year.

Q. He has used it all the time, he has been in possession of it and using it yet?

A. Yes, sir.

Q. In his operations on the Kemption mine?

A. He is using it under a stipulation with me by which we allow him to use it.

Q. With you?

A. Well, between the attorneys. It was with my consent that the stipulation was entered into.

Q. You were enjoined were you not from blowing up that tunnel?

A. From blowing up the tunnel?

Q. Yes.

A. Why, we were enjoined from interfering with it, and the Kempton people were enjoined from using the tunnel and from working or dumping on the ground there and of course that same injunction enjoined us from using it.

Q. You were enjoined from interfering with that tunnel?

A. Yes; we were enjoined and of course you were enjoined upon the same process.

Q. Do you know Mr. Holden that that is a tunnel right which was located or as claimed by the owners of the Kempton to be a tunnel right, and which was located by them in 1873?

A. I know it was located by them in 1873.

Q. That is connected with the underground workings of the Kempton mine, isn't it?

A. It is.

Q. And has been for many years?

A. Well yes, for many years. It has been for quite a number of years.

Q. You know the fact to be and you have heard the witnesses testify to it at least that it has been connected with the Kempton workings ever since about 1875?

A. I don't think it was connected as early as that; I have only certain information; I am not sure of the date it was connected; but I don't think it was connected as early as that.

Q. Now before the commencement of this suit what work if any were you doing in the neighborhood of these workings?

A. I shall have to refer to this other map? We were working in the workings that are known as the Holden raise; the connection is almost made to here—made by this time, between the Holden raise and the ore bodies under the Jordan Extension. There is about 35 to 40 feet to run, or was when we started up some days ago to make the connection. There are ore bodies out here under the Fairview. We were working in those ore bodies, I can't exactly tell the time but recently we have been working and developing ore bodies that are lying—

Q. To the north?

A. To the north.

109 Q. Those ore bodies that you are working in here are over on the other side of the mountain from us, are they not, the other side of Jordan Hill?

A. Well they are almost—let us see—I shall have to give you a little description of the country, if I may, there. The mountain runs starting from a point near the end line, near the southwesterly end line of the Fairview, nearly in the Fairview and up along on the northwesterly side line of the Northern Light and straight out to the northeast of it, and then there was a little ridge which was known as Jordan Hill.

Q. Jordan Hill?

A. Which has its apex in joining with the main ridge somewhere near the word "Fairview," and goes in an easterly direction down to nearly the Jordan, within four hundred feet of the easterly end line of the Jordan lot 64.

Q. Jordan Hill then separates these workings in the Kempton ground from these workings over here?

A. Why, Jordan Hill is represented on the surface; these are all underground.

Q. Jordan Hill comes in here between?

A. Yes; we go right through the hill.

Q. And the country between these workings and your workings is partly a belt of quartzite, isn't it?

A. Pardon me.

Q. I understand a belt of quartzite runs in the summit of Jordan Hill and divides the Kempton lode from this lode over here?

A. Oh, no, nor any approximation of it; nothing like it.

Q. Are the ore bodies that you are working there in the Fairview and Northern Light the same as the ore bodies that Colonel Wall is on?

Objected to by plaintiff as not cross-examination.

Objection sustained.

Redirect examination.

By Mr. SUTHERLAND:

Q. Mr. Holden you did not go over any hill to get to these workings?

A. No, sir; no.

Q. You go right through from the workings here in this locality right through?

A. Yes; you can take the yellow level which comes to the surface at a point about 250 feet northwest of the mineral monument and walk right in on the level.

Q. The title to the Neptune tunnel is in litigation now, is it?

A. It is in litigation in this Court.

Q. Between the United States Mining Company and the Kempton Company?

A. It is.

110 Q. And the litigation is still pending?

A. The litigation is still pending not having come to trial.

Q. And both parties are enjoined from using it pending the litigation?

A. Both parties are enjoined from using it pending the litigation.

Cross-examination.

By Mr. HILES:

Q. Not from using the tunnel but there was an injunction against the Kempton people from dumping on the ground at the mouth of the tunnel?

A. No; it is an injunction against using the tunnel and against dumping also; the injunction will speak for itself.

Mr. SUTHERLAND: I offer in evidence these two maps referred to by the witnesses.

There being no objection said maps were received in evidence and marked "Exhibit Q, J. W. C." and "Exhibit R, J. W. C."

And thereupon plaintiff rested its case in chief.

Mr. HILES: We move to dismiss this suit upon the ground that the bill shows upon its face, and the evidence introduced in the case shows that this is a case where we have a right, where the defendants have a right, to a trial by jury if they should so elect.

And then followed some remarks by counsel as to the effect of the ruling of Judge Marshall in overruling the demurrer to the amended bill in this case, after which the Court was adjourned, to meet again on tomorrow morning, the 21st day of October, 1902, at 9:30 A. M.

TUESDAY, *October 21st*, 1902.

Mr. SUTHERLAND: In view of the motion that has been made we wish to recall a witness to make somewhat more specific the facts on one or two points?

The COURT: You may do so.

ALBERT F. HOLDEN, a witness produced by plaintiff, being recalled and having already been sworn herein, testified:

Direct examination.

By Mr. SUTHERLAND:

Q. I will ask you if under the Fairview there is any known ore body which is still existing there anywhere and which has never been reached by the defendant or any of them?

A. There is.

111 Q. If so point it out?

A. It is indicated in the yellow level near station 876 marked in red ink and the surrounding workings. There is a large body of ore.

Q. These are the workings of the plaintiff company?

A. They are the workings of the United States Mining Company.

Q. Vertically beneath the surface of the Northern Light is there any known developed ore body now existing which has never been reached by any of the workings of the defendants?

A. A portion of the same ore body I spoke of is under the Northern Light also.

Q. Where you hold your ruler?

A. Where I hold my ruler, above the cut marked second cross cut.

Q. Vertically beneath the surface of the Jordan Extension is there any known and large ore bodies which have never been reached by any of the workings of the defendants?

A. There are two or more, one marked in the Holden Raise on this map. This section right here is a large ore body which has never been reached by the defendant.

Q. When the workings were commenced was there any connection between the plaintiff's workings on that ore body and the defendant's workings?

A. No, sir; there was no connection at all.

Q. Now how much of this ore body to which I am pointing which is beneath the Grizzly around near stations—well, that yellow ore body in which the elevation is given as 1259.9, and around in that neighborhood, has been opened since this suit was commenced, opened by the defendant, notwithstanding the injunction, under a stipulation between the parties to this action permitting development work to be done?

A. There is about 400 feet between three and four hundred feet; about nearly four hundred feet of that work has been done they claim under an agreement with me.

Q. Permitting development work to be done. And that work is in ore?

A. That work is in ore.

Q. And developed ore that was unknown at the time of the commencement of this action?

A. It was not shown at the time the action was commenced.

Q. When did Mr. Wall and his associates first commence work anywhere under the surface of any of these claims?

A. Something less than a year ago.

Q. Do you remember what date the action was commenced?

A. I think this action was commenced on the 1st of July, around there—Well, I guess, before that. I have forgotten the dates named I think February 19th.

112 Q. So that the action was commenced since you learned that they were under your ground?

A. I had the suit started as soon as I knew they were under the vertical boundaries.

Q. Under the Grizzly. I omitted to call your attention to that. Is there now a known ore body vertically beneath the surface of that claim other than the one to which I called your attention already, which has never been reached by any of the workings of the defendant?

A. There is.

Q. Point it out?

A. An ore body near the point of the yellow level, near the elevation 1022.9 and 1023; there are ore bodies there.

Cross-examination.

By Mr. Hiles:

Q. Mr. Holden those workings and developments in the Northern Light and Fairview which you say have no connection with Col. Wall's workings are lower down, that is they are beneath the workings of the defendants?

A. No; not beneath the workings. They are at a lower level but not beneath them.

Q. I mean at a lower level when I say that; they are at a lower level than the workings of the defendants. Now is it not true that the defendants have brought a suit in trespass against you and your company and a bill to quiet title?

Objected to by plaintiff as immaterial; it is a suit brought within the past few days and has nothing to do with this case.

COURT: Proceed with the question.

Q. —a suit in trespass to try the right of possession and a bill in equity to quiet title and for injunction as to that part of the mine?

Objected to as irrelevant and immaterial and nothing to do with this case.

Mr. HILES: They are introducing this evidence for the purpose of showing that we are not in possession. If it is material for them to show that they are in possession of some other part of the lode as against us, it is material for us to show upon cross examination that their right to the possession is disputed. The truth is this that the workings of the Kempton are on the dip of the lode. These workings are workings which the plaintiff company have reached by means of tunnels which start away out here in this country and run through the mountain, and they strike this ore body on this dip.

Now by this evidence they are trying to correct legal implica-
113 tions which flow from the testimony which they put in yesterday, to-wit: that we are in the possession of this part of the lode.

In order to rebut the legal implications which flow from their testimony yesterday they show that they are in possession of the lode at a lower level and are working it; and therefore, I think it is proper cross examination, if it be permissible for them to show that they are in the possession of some part of the lode which is not a subject of litigation in this action. They now seek to introduce new matter in their direct evidence, matter which refers to another case and another controversy, and now as a matter of cross examination I respectfully insist that I have a right to cross examine the witness upon this matter.

The COURT: I think I will sustain the objection.

To which ruling defendants, by their counsel, then and there excepted.

Q. Now you spoke of the Holden raise as being in the ore body under the Jordan Extension. I will ask you if that Holden raise was not prosecuted since the commencement of this action?

A. No, sir.

Q. There has been no work done in the Holden raise since the commencement of this action?

A. Yes, sir.

Q. Well, what?

A. Well, I will say within the last ten days. By the advice of counsel the Holden raise has been continued on the ore with the intention of connecting it with the stopes known as the Sampson stope further up.

Q. How far have you continued it?

A. Well, my last information I think we were about 30 feet—it is not shown on the map.

Q. Since the commencement of this action how far have you prosecuted it?

A. Not at all. There has never been, except of course the last ten days work I spoke of, but after the injunction was issued of course we did not work in that section. I could not tell you exactly the last time work was done there, but it was run a year or a year and a half ago, a year and a half ago, I think.

Redirect examination.

By Mr. SUTHERLAND:

Q. This ore body that you have last been interrogated about by Judge Hiles under the Jordan Extension is practically on a level and on the strike of the vein you claim?

A. Not on the strike of the vein but on the dip of the vein.

114 Q. It is practically on a level?

A. Very nearly level, within a very few feet of it.

Objected to as leading.

Mr. SUTHERLAND: I will ask if the answer denies the allegations of our complaint in which we plead that we have complied with the laws of the State with reference to the filing of our articles of incorporation and so on. I have a certificate here——

Mr. HILES: I know the fact to be that you have.

Mr. SUTHERLAND: There is no dispute about that?

Mr. HILES: I know the fact to be so. We admit the fact is so and there is no necessity for any evidence upon that point.

And thereupon said plaintiff, by its counsel, offered in evidence the map referred to by Mr. Holden, and there being no objection it was received in evidence and marked "Exhibit S, J. W. C."

And thereupon said plaintiff rested its case in chief.

Mr. ROGERS: If the Court please, we desire to enter upon the record a motion at this time, the plaintiff having rested its case. The motion is as follows: The defendants now come and move the Court to dismiss the amended bill of complaint in this case to enter an order directing that plaintiff be required to plead the facts which involve the law issues in this case which appear upon the face of the amended bill and new in the evidence which has been elicited in support of it. This motion is made upon the grounds, 1st, That it appears by the said amended bill that the defendants were at the time of the commencement of this action and the filing of said amended bill and are now in possession of the land and lode mentioned in said amended bill of complaint from the surface of the earth in Kempton and Ashland ground on its dip under the adjacent alleged mining claims, called the Jordan Extension, Grizzly, Northern Light and Fairview claims.

2nd. That it appears from the evidence which has been elicited by complainant in support of its said amended complaint that the defendants were at the time of the commencement of this action and at the time of the filing of said amended bill and are now in the possession of the mine and lode mentioned in said amended bill of complaint upon the surface of the earth in Kempton and Ashland ground on its dip under adjacent alleged mining claims called the Jordan Extension, Grizzly, Northern Light and Fairview claims.

And the said defendants now further come and pray for an order of the Court for and they hereby insist upon and demand a trial by jury of the question of their right of possession of the said mine and lode so as aforesaid shown by the complainant's evidence to be and to have been at the time of the commencement of this action in the possession of the defendants.

Mr. DICKSON: Do you rest?

Mr. ROGERS: No, sir; we make this motion at this time.

Mr. DICKSON: If it is denied do you propose to introduce evidence.

Mr. ROGERS: We do most certainly; it is not a motion for a non suit.

And then followed the arguments of counsel which were continued until the noon recess.

Recess until 1:30 P. M.

And thereupon the Court said that the trial would be proceeded with, and that the motion to dismiss, etc. would be taken under advisement for the present.

Mr. DICKSON: In order that the bill may conform to the proof, we ask leave to amend the bill by striking out of the seventh paragraph on page 6, from lines 10 and 11, the words "And the Fairview Mining claim."

Objected to by defendant because it does not conform to the evidence. Objection overruled and amendment to that effect permitted by the Court by interlineation, and the same was done accordingly.

And Mr. Ogden Hiles having made the opening statement on the part of the defendants, said defendants, to maintain the issues on their part gave in evidence, the following, that is to say:

Mr. ROGERS: We will offer in evidence as defendants' Exhibit 1, patent of the United States to George Hearst, dated September 27th, 1875, purporting to convey the Ashland mine.

There being no objection to said patent, it was received in evidence and marked "Exhibit 1, J. W. C."

Mr. ROGERS: Under the stipulation referred to by Mr. Sutherland, entered into between counsel, as to the admission in evidence of abstracts of title, I offer in evidence sheet 17 of abstract of title to Ashland mining claim, prepared by Utah Savings and Trust Company, which purports to show the record of a power of attorney dated January 26, 1890, from George Hearst and Phœbe Apperson Hearst to Robert C. Chambers.

There being no objection made, said record was received in evidence, and marked "Exhibit 2, J. W. C."

EXHIBIT "2"

Mining Claims Recorded
"C" 1072.
Jan. 28–91.
10.20 A. M.

George Hearst
Phebe Apperson Hearst (1)
to
Robert C. Chambers

POWER OF ATTORNEY
Dated Jan. 26, 1890
Ackd. Jan. 7, 1891
Witnessed O. K.
GRANTING to said second

power to contract for sale of and to sell and convey by written instruments, agreements, conveyances, or otherwise, and to lease and to grant the right to mine in and work and extract, ship and sell the ores from the ASHLAND and ASHLAND NO. 2 Lode Mining Claims, Lots 67 and 69 respectively, patented and situated in West Mountain Mining District, Salt Lake County, Utah; to grant options to purchasers of the foregoing mining property, all on such terms and conditions as to our said Attorney in fact may seem proper; to release and relinquish the dower and dower rights of said Phebe A. Hearst in and to said property. Confirming all that our said attorney has done and may hereafter do in the premises.

(1) Phebe A. Hearst and wife in body of instrument.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

117 Mr. ROGERS: We offer next sheet 18 of same abstract a record of a deed by George and Phoebe Apperson Hearst by their attorney in fact Robert C. Chambers to Lemuel U. Colbath dated January 12th, 1891.

There being no objection, the same was received in evidence and marked "Exhibit 3, J. W. C."

1 Def't Documents.

EXHIBIT "3."

Deed Recorded
"N" 69.
Jan. 28-91
10.30 A. M.

George Hearst, (1)
By Robert C. Chambers,
his Attorney in fact,
Phebe A. Hearst, (2)
By Robert C. Chambers,
her Attorney in fact,
to
Lemuel U. Colbath.

MINING DEED.
Dated Jan. 12, 1891
Ackd. Jan. 27, 1891
Witnessed O. K.
Consideration $15,000.00.
CONVEYS all of the ASHLAND and ASHLAND NO. 2 Lode Mining Claims, Lots Nos. 67 and 69 respectively, patented.

Said Phebe A. Hearst relinquishes forever her dower right in and to said premises. (2) wife of (1) in body of deed and acknowledgment.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

119 Mr. ROGERS: We next offer sheet 21 from the same abstract, purporting to be a record of a mining deed from L. U. Colbath to Robert C. Chambers dated April 28th, 1897, of 10/100 of Ashland lode.

There being no objection, the same was received in evidence, and marked "Exhibit 4, J. W. C."

EXHIBIT "4."

Deed Recorded
"Q" 14.
June 3-97
2.16 P. M.
No. 111803

L. U. Colbath, (1)
to
Robert C. Chambers.

MINING DEED
Dated Apr. 28, 1897
Ackd. Apr. 28, 1897
Witnessed O. K.
Consideration $10.00.
CONVEYS an undivided
10/100 of the ASHLAND Lode Mining Claim, Lot No. 67.

ALSO an undivided 10/100 of the ASHLAND NO. 2 Lode Mining Claim, Lot No. 69, of the official surveys of West Mountain Mining District.

Said Claims situated in the West Mountain Mining District, Salt Lake County, Utah, and for a more particular description of said claims reference of here made to said surveys in the office of the U. S. Surveyor General for Utah.

(1) widower in body of deed.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

121 Mr. ROGERS: Next we offer page 22 of same abstract, being a record of a deed from LL U. Colbath to J. B. Haggin of 45/100 of Ashland lode, dated April 28, 1897.

There being no objection, the same was received in evidence and marked "Exhibit 5, J. W. C."

122

EXHIBIT "5."

Deed Recorded
"Q" 78
Dec. 7-97.
3.20 P. M.
No. 115822

L. U. Colbath, (1)
to
J. B. Haggin.

MINING DEED
Dated Apr. 28, 1897
Ackd. Apr. 28, 1897
Witnessed O. K.
Consideration $10.00
CONVEYS an undivided

45/100 interest in the ASHLAND Lode Mining Claim, Lot 67, and an undivided 45/100 interest in the ASHLAND NO. 2 Lode Mining Claim, Lot No. 69, situate in West Mountain Mining District, Salt Lake County, Utah.

(1) widower in body of deed and acknowledgement

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

123 Mr. ROGERS: We next offer page 23 of same abstract record of a deed from L. U. Colbath to Phoebe A. Hearst purporting to convey 45/100 of Ashland lode, lot 67, dated April 28, 1897.

There being no objection the same was received in evidence, and marked " Exhibit 6, J. W. C."

EXHIBIT "6."

Deed Recorded
"Q" 79.
Dec. 7-97
3.21 P. M.
No. 115823

L. U. Colbath, (1)
to
Phebe A. Hearst.

MINING DEED.
Dated Apr. 28, 1897
Ackd. Apr. 28, 1897
Witnessed O. K.
Consideration $10.00.
CONVEYS undivided
45/100 interest in the ASHLAND Lode Lot No. 67, and undivided 45/100 interest in the ASHLAND NO. 2 Lode, Lot No. 69, West Mountain Mining District, Salt Lake County, Utah.

(1) widower in body of deed and acknowledgement.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

125 Mr. ROGERS: Next we offer sheet 24 of same abstract being mining deed from Phoebe A. Hearst to Ivanhoe Mining Company of 45/100 of Ashland lode, dated August 3, 1897.

There being no objection the same was received in evidence and marked Exhibit 7, J. W. C."

EXHIBIT "7."

Deed Recorded
"Q" 80.
Dec. 7–97.
3.22 P. M.
No. 116824

Phebe A. Hearst
to
The Ivanhoe Mining Company,
a corporation organized under
laws of State of California

MINING DEED
Dated Aug. 3, 1897
Ackd. Aug. 3, 1897
Witnessed O. K.
Consideration $10.00
CONVEYS undivided
45/100 interest in the ASHLAND and undivided 45/100 interest in the ASHLAND NO. 2, West Mountain Mining District, Salt Lake County, Utah.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

127 Mr. ROGERS: We next offer page 25 of same abstract, being mining deed from J. B. Haggin to Ivanhoe Mining Company, of 45/100 of Ashland lode, dated September 8, 1897.

There being no objection, the same was received in evidence and marked "Exhibit 8, J. W. C."

2 Def't Docum'ts.

EXHIBIT "8."

Deed Recorded
"Q" 81.
Dec. 7-97
3.23 P. M.
No. 115825

J. B. Haggin
to
The Ivanhoe Mining Company,
a corporation organized under
laws of State of California.

MINING DEED
Dated Sept. 8, 1897
Ack'd Sept. 8, 1897.
Witnessed O. K.
Consideration $10.00
CONVEYS undivided

undivided 45/100 interest in the ASHLAND and undivided 45/100 interest in the ASHLAND NO. 2 Lode Mining Claims, situate in West Mountain Mining District, Salt Lake County, Utah.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

129 Mr. ROGERS: We next offer sheet 26 of same abstract being deed from Robert C. Chambers to Ivanhoe Mining Co. of 1/10 of Ashland Lode, dated July 31, 1897.

There being no objection the same was received in evidence and marked "Exhibit 9 J. W. C."

EXHIBIT "9."

Deed Recorded
"Q" 82.
Dec. 7-97
3.24 P. M.
No. 115826

R. C. Chambers, (1)
to
Ivanhoe Mining Company,
a corporation organized under
laws of State of California.

MINING DEED
Dated July 31, 1897
Ackd. July 31, 1897
Witnessed O. K.
Consideration $10.00
CONVEYS and undivided 1/10 of the ASHLAND Lode, Lot No. 67, and an undivided 1/10 interest in the ASHLAND NO. 2 Lode, Lot No. 69, West Mountain Mining District, Salt Lake County, Utah.

And the title to each of the undivided interests in said two claims has heretofore been held in the name of L. U. Colbath, but in trust for first party herein.
(Also conveys other property)

(1) widower in body of deed and acknowledgement.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

131 Mr. ROGERS: We next offer in evidence original lease in writing from the Ivanhoe Mining Company to H. O. Bemis and Adolph Jansen, dated August 15, 1900; also supplemental lease and agreement referring to said lease of August 15, 1900, dated December 10, 1901, and also modification of foregoing dated February 11, 1902.

Mr. SUTHERLAND: We object to the said lease last above referred to on the ground that it appears to have been made by Robert C. Chambers acting as agent, and it does not appear that he had any authority as agent to execute a lease of that character.

Said leases were marked respectively Exhibit 10, J. W. C., "Exhibit 11, J. W. C." and "Exhibit 12, J. W. C.," and were received in evidence.

EXHIBIT "10."

In. Rev. Stamp
50c.

This lease made August 15th 1900, by and between the Ivanhoe Mining Company, a corporation, by R. C. Chambers, its Agent, as first party thereto, and H. O. Bemis and Adolph Jansen of Bingham, Utah, as second parties thereto, witnesseth:

In consideration of the agreements of the second parties herein contained to be kept and performed by them, the first party hereby leases and lets to the second parties from the date hereof to December 31st, 1901, all of the Ashland lode mining claim, and all of the Ashland No. 2, lode mining claim, both patented by the United States and situate in West Mountain Mining District, Salt Lake County, State of Utah, but on and subject to the terms, agreements and conditions hereinafter contained, to-wit:

The second parties agree to work the leased property continuously during the term, and to not stop work therein for any period of thirty (30) successive days; to do all work therein in a proper and miner-like manner; to timber all openings made or used by them therein when in the course of good mining same require timbering; to remove and place on the dumps on the leased property, all ores and waste extracted, separating the ores from the waste, and placing them in a separate dump; to handle and mill the ores that will not pay for shipment; if they choose to handle and mill the same, but at their own sole cost and expense as to such handling and milling; to ship to the nearest and most available market and there sell in

132 open market to the highest bidder for cash, all shipping ores as fast as same accumulate in shipping lots, and the product of all milling ores reduced by them; to furnish and pay for all labor, tools, supplies and materials necessary and proper to do all the mining work aforesaid, and the work of handling and milling said ores that will not pay for shipment (if they handle and mill the same); to first deduct from the gross proceeds received on the sale of each lot of shipping ores and mill product, the expenses of shipment from the mine dump or from the mill, as the case may be, to market, and the expenses of sampling, assaying, and smelting charges, and to

divide and pay the net sum then remaining on each lot shipped as follows: One eighth (1/8) thereof to the first party as rental and royalty, and the remaining seven eighths (7/8) thereof to themselves to have and keep as their own; that they will not assign this lease or any interest therein or sublet the leased premises or any portion thereof without first obtaining the written consent thereto of the first party; that at the expiration or earlier termination of the lease they will quit and surrender to the first party the quiet and peaceable possession of the leased premises and the whole thereof; that if they break any material term or condition of this lease by them to be performed or complied with, or fail to comply with any agreement herein contained, to be performed or complied with by them, then, in any such event, the first party at his option, and without any written notice to them or demand on them whatsoever, may declare this lease and all rights, titles, and interests of the second parties therein and thereunder forfeited and terminated, and the lease shall thereupon terminate and cease.

It is further stipulated and agreed by and between the parties hereto, that the parties of the second part may, at their option, at any time during the life of this lease, purchase the said property from the party of the first part by paying to the party of the first part the sum of twenty thousand ($20,000) dollars, cash.

Witness the hands of the parties hereto this twentieth day of August, 1900.

IVANHOE MINING COMPANY,
By R. C. CHAMBERS, *Agent.*

Signed in the presence of
L. U. COLBATH.

Filed U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

133 EXHIBIT "11"

This supplemental agreement made the 10th day of December, A. D. 1901, between the Ivanhoe Mining Company, a corporation of the State of California; party of the first part, and H. O. Bemis and Adolph Jansen, of Bingham, Salt Lake County, Utah, parties of the second part, witnesseth: that:

Whereas the first party by lease dated August 20th, 1900, leased to the second parties until Dec. 31, 1901:

The Ashland lode and mining claim, and the Ashland No. 2, lode and mining claim, situated in the West Mountain Mining District, Salt Lake County, Utah, as the same are described in the United States patents therefor; and

Whereas, said lease contains stipulations for working said mining claims, and gives an option for the purchase thereof, as more fully appear therein, and said lease is referred to as fully as if herein repeated;

Now in consideration of one dollar, the payment of which is

acknowledged by the first party, the parties hereto mutually agree upon the following modifications and changes in said lease, to wit:

The lease is extended upon its terms and conditions (excepting as to time) to and including the 31st day of December, 1902.

The option to purchase is modified so that in case the second parties on or before the 31st day of December, 1902, shall pay for and become entitled to a deed on the terms specified in said original lease, the party of the first part will abate 10 per cent, or the sum of $2,000, from the purchase price.

The second parties, having kept and performed the stipulations of the lease, are also authorized to negotiate a sale of said mining claims, within the time of this extension, for $20,000 or to assign the option to purchase (but not the lease otherwise than is specified in the original lease) to any party or parties who will pay the first party the sum of $20,000, and upon said payment the first party will allow and pay the second parties 10% or $2,000 of the purchase price for negotiating the sale.

IVANHOE MINING COMPANY, [SEAL.]
By FRED CLARK, *President.*
F. G. DRUM, *Sec'y.*
H. O. BEMIS.
ADOLPH JANSEN.

Witness for Bemis & Jansen:
L. U. COLBATH.

134 STATE OF CALIFORNIA, *City and County of San Francisco,* ss:

On this Tenth day of December, A. D. One thousand Nine hundred and One, before me, N. E. W. Smith, a Notary Public in and for said City and County, personally appeared Fred Clark, known to me to be the President and F. G. Drum known to me to be the Secretary of the Ivanhoe Mining Company, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

In Authentication Whereof, I have hereunto affixed my signature and seal of office, at said City and County, the day and year last above written.

[SEAL.] N. E. W. SMITH,
Notary Public in and for the City and County of San Francisco, State of California.

Indorsed: Ivanhoe Mining Co. with H. O. Bemis and Adolph Jansen. Supplemetal Agreement.

Filed in U. S. Circuit Court, District of Utah, Oct. 21, 1902. Jerrold R. Letcher, Clerk.

EXHIBIT "12."

Whereas by lease dated August 20th, 1900, the Ivanhoe Mining Company leased to H. O. Bemis and Adolph Jensen, the Ashland Lode Mining Claim and the Ashland No. 2 Lode Mining Claim, situated in the West Mountain Mining District, Salt Lake County, Utah, on the terms therein set out, and said lease is referred to as a part hereof, and

Whereas by a supplemental agreement between the parties dated the 10th of December, 1901, an extension of said lease was made; the terms of the agreement being referred to as a part hereof; and

Whereas, by said lease and supplemental agreement, it was provided the lessees should not assign the lease or sublet the premises without the written consent of the lessor;

Now this agreement and consent of the said Lessor, witnesseth; that the Lessees are hereby authorized to assign the said lease dated August 20th, 1900, as modified by said supplemental agreement, to any person or party in connection with an assignment of the option to purchase the leased premises given by said supplemental agreement made December 10th, 1901. Dated February 11th, 1902.

IVANHOE MINING COMPANY,
By FRED CLARK, *President.*
F. G. DRUM, [*Sec'y.*] [SEAL.]

135 STATE OF CALIFORNIA, *City and County of San Francisco,* ss:

On this Eleventh day of February, A. D. One thousand Nine Hundred and Two, before me, N. E. W. Smith, a notary Public in and for said City and County, personally appeared Fred Clark known to me to be the President, and F. G. Drum known to me to be the Secretary of the Ivanhoe Mining Company, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

In Authentication Whereof, I have hereunto affixed my signature and seal of office, at said City and County, the day and year last above written.

[SEAL.]

N. E. W. SMITH,
Notary Public in and for the City and County of San Francisco, State of California.

Indorsed: Ivanhoe Mining Co. to Bemis & Jansen. Permission to Assign.

Filed in U. S. Circuit Court, District of Utah, Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: We next offer in evidence the assignment of the leases of Bemis and Jansen to E. A. Wall, dated September 15th, 1902.

There being no objection, said assignment was received in evidence and marked "Exhibit 13, J. W. C."

EXHIBIT "13."

This Agreement made and entered into this 15th day of September, 1902, by and between H. O. Bemis and Adolph Jansen, of Bingham, Salt Lake County, Utah, parties of the first part, and Enos A. Wall, of Salt Lake City, Utah, party of the second part, Witnesseth:

Whereas said parties of the first part, by an instrument in writing, dated the 15th day of August, 1900, secured from the Ivanhoe Mining Company, a corporation, a lease of certain mining ground situate in West Mountain Mining District, Salt Lake County, Utah, to-wit, all of the Ashland lode mining claim and the Ashland No. 2 lode mining claim, both patented, said lease expiring by its terms on the 31st day of December, 1901, and containing an option to purchase said property during the life of said lease for the sum of $20,000.00, and

136 Whereas, by an instrument in writing, dated the 10th day of December, 1901, the said Ivanhoe Mining Company modified the said lease and option to purchase by extending the terms and conditions to and including the 31st day of December, 1902, also modifying said option to purchase by abating ten per cent, to-wit $2,000.00 of said purchase price of $20,000.00, and

Whereas, by an instrument in writing, dated the 11th day of February, 1902, said Ivanhoe Mining Company gave its consent to said H. O. Bemis and Adolph Jansen authorizing them to assign said lease, as modified, to any party, in connection with the assignment of the option to purchase, and

Whereas, on the 17th day of February, 1902, by an instrument in writing, said H. O. Bemis and Adolph Jansen sold and assigned to said Enos A. Wall said lease and option, as extended and modified by said supplement agreements, subject to certain terms and conditions, among them being the payment of $4,000.00 on or before the 20th of November, 1902, and

Whereas, by and with the consent of the parties of the first part, said Enos A. Wall has procured, in his own name, a lease and bond from said Ivanhoe Mining Company, covering said property, expiring on the 31st day of December, 1904;

Now, Therefore, in consideration of the premises and the sum of One Dollar to each in hand paid by the other, the receipt whereof is hereby acknowledged, it is mutually agreed by and between the parties hereto as follows:

1. That said assignment of said lease and bond, dated the 17th day of February, 1902, from said parties of the first part to said party of the second part, be made unconditional, and the payment of $4,000.00 as therein provided be and the same is hereby waived, and the said parties of the first part do hereby sell, assign, transfer and set over unto said party of the second part, his heirs or assigns, said lease and bond from said Ivanhoe Mining Company, as modified and extended as herein stated.

2. Said parties of the first part do hereby sell, assign, transfer, and

set over unto said party of the second part, his heirs and assigns, any and every cause of action which they may have against any person, firm or corporation subsequent to the 15th day of August, 1900, the date of said lease and bond, for damage done, or waste committed, to said property covered by said lease.

137 3. Said Enos A. Wall hereby agrees to use his best efforts to sell and dispose of said property covered by said lease and bond, within the term granted him, to-wit, December 31, 1904, and out of the first proceeds of said sale to pay to said H. O. Bemis and Adolph Jansen, parties of the first part, the sum of $4,000.00 said $4,000.00 to be in full for all claims, compensation, commissions, etc.

4. This agreement shall extend to any subsequent extension that the said Wall may obtain.

5. It is the intention of the parties hereto, through the said Enos A. Wall, to make a sale and disposition of the property covered by said lease and bond, and that when so sold, out of the first proceeds the said first parties are to have and receive $4,000.00 and have no other claims against the said Wall or said Ivanhoe Mining Company, whatsoever.

6. In case said Enos A. Wall elects to purchase said property for himself he shall thereupon pay said sum of $4,000.00 to said parties of the first part.

In Witness Whereof the parties have hereunto set their hands this 15th day of September, 1902.

H. O. BEMIS,
ADOLPH JANSEN,
ENOS A. WALL.

In Presence of
WM. H. BRAMEL.

STATE OF UTAH, *County of Salt Lake*, ss:

On this 15th day of September, 1902, personally appeared before me H. O. Bemis, Adolph Jansen and Enos A. Wall, the signers of the above instrument, who duly acknowledged to me that they executed the same.

[SEAL.] WM. H. BRAMEL,
Notary Public.

My Commission Expires March 25, 1905.

Indorsed: Assignment of Lease. Bemis & Jansen to E. A. Wall. Term ending Dec. 31st, 1902.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: We next offer in evidence a patent from the United States to Benjamin M. Du Rell et al, purporting to convey the Kempton mine to them dated February 23, 1875.

There being no objection, the same was received in evidence and marked "Exhibit 14, J. W. C."

138 Mr. ROGERS: I next offer to read from Abstract No. 17740 of the same abstract Company from page 7 record of deed dated September 8, 1876, of Isaac Schoenberg by Geo. R. Maxwell late U. S. Marshal to George M. Scott conveying all of his interest in the Kempton mine. (Abstract marked Exhibit 15.)

Mr. SUTHERLAND: We object upon the ground that it does not appear that the United States Marshal had authority to make the conveyance, and further that it appears that he was Late United States Marshal and not shown that a late U. S. Marshal can make a conveyance of this kind.

Mr. ROGERS: I will procure a certified copy of this instrument and submit it to counsel later and he can then be heard on his objection

Mr. ROGERS: I next offer from the same abstract, (marked Exhibit 15, J. W. C.,) deed of George M. Scott to C. W. Bennett dated December 18th, 1876, conveying all interest.

EXHIBIT "15."

Isaac Schoenberg by
George R. Maxwell, late U. S. Marshal To George M. Scott

Dated Sept. 8, 1876	Purports to convey all his interest
Recorded Sept. 19, 1876.	Book "I" pages 33.4.
George M. Scott	To Charles W. Bennet
Deed dated Dec. 18, 1876	Purports to convey all interest
Recorded Dec. 23, 1876.	Book "I" page 197.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: I next offer from same abstract deed from C. W. Bennett to Francis Goekin dated December 21, 1876, purporting to convey one third of Kempton lode.

There being no objection the same was received in evidence and marked "Exhibit 15*a*, J. W. C."

EXHIBIT "15*a*."

Charles W. Bennett	To Francis Goeken
Deed dated Dec. 21, 1876	Purports to convey 1/3 part
Recorded Dec. 23, 1876	Book "I" pages 197.8

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

139 Mr. ROGERS: I offer next a deed of B. M. Du Rell, while U. S. Marshal to Albert Hagan dated April 28th, 1879, purporting to convey all interest in Kempton and Neptune mines.

Mr. SUTHERLAND: We object to this for the same reasons stated to the other Marshal's deed, that it does not appear that the Marshal had any authority to make the deed.

Mr. ROGERS: We will pursue the same course.

EXHIBIT "15*a*'."

B. M. Du Rell by U. S. Marshal Deed dated April 28, 1879 Recorded May 1, 1879.	To Albert Hagan Purports to convey the Mine Book "J" pages 458.9.60.

Filed in U. S. Circuit Court, District of Utah, Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: Next we offer a deed from Albert Hagan to Edward Balbach and Edward Balbach, Jr., dated April 30, 1879, purporting to convey 11/30 interest in Kempton mine.

There being no objection made, the same was received in evidence and marked "Exhibit 15*b*, J. W. C."

EXHIBIT "15*b*."

Albert Hagan Deed dated April 30, 1879 Recorded May 1st, 1879 To Edward Balbach &	Edward Balbach jr Purports to convey 11/30 inst. Book "J" pages 460.1

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: Next I offer a deed from Albert Hagan to Robert W. Bonnell, L. M. Lawson and George E. Simpson, dated April 30th, 1879, purporting to convey 19/30 interest in Kempton mine.

There being no objection, the same was received in evidence and marked "Exhibit 15*c* J. W. C."

EXHIBIT "15*c*."

Albert Hagan Deed dated April 30, 1879 Recorded May 1, 1879. To Robert W. Donnell	L. M. Lawson & George E. Simpson Purports to convey 19/30 interest Book "J" pages 462.3.

140 Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: Next I offer a deed from Lemuel U. Colbath to B. M. Du Rell dated May 23rd, 1874, which purports to convey all his interest.

There being no objection, the same was received in evidence and marked "Exhibit 15*d*, J. W. C."

EXHIBIT "15*d*."

Lemuel U. Colbath	To B. M. Du Rell
Deed dated May 23, 1874	Purports to convey all his int.
Recorded May 28, 1874	Book "G" page 309

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk. By —— ——, Deputy.

Mr. ROGERS: I next offer in evidence record of deed from abstract 17740 (Exhibit 15) a mining deed from Mary T. Donnell widow and sole heir of Robert W. Donnell, Leonidas M. Lawson, Theodosia T. Lawson, wife, Mary E. Simpson widow of George E. Simpson, Frank Simpson, Fanny B. Simpson wife, Ellen Lee Simpson, George Elliott Simpson, all unmarried, James Y. Simpson, Lenora Simpson, wife, Madtin Simpson, heirs of George E. Simpson, to William J. Harvey, dated August 23rd, 1899, purporting to convey all those certain mining claims situated in Bingham Canyon, West Mountain Mining District on Jordan Hill, known and described as the Kempton mine or lode, the Neptune mine or lode, the Neptune tunnel and the Moore mine, together with other premises.

There being no objection, the same was received in evidence, the abstract being marked "Exhibit 15*e*, J. W. C."

Nov. 4-01.
4.40P. M.
No. 152231

EXHIBIT "15-e"

Mary T. Donnell widow and sole heir of Robert W. Donnell Leonidas M. Lawson Theodosia T. Lawson, wife Mary E. Simpson, widow of George E. Simpson Frank Simpson Fanny B. Simpson, wife Ellen Lee Simpson, Eliza Belle Simpson Mary Louise Simpson, George Elliott Simpson, all unmarried, James Y. Simpson, Lenora Simpson, wife, Madtin Simpson, heirs of George E. Simpson, to William J. Harvey.	Mining Deed Dated Aug. 23, 1899 Ackd. Aug. 23, Oct. 4, and Nov. 17, 1899 Witnessed O. K. Consideration $1.00 CONVEYS all those certain mines and mining claims situate in Bingham Canyon West Mountain Mining Dis- trict, Salt Lake County, State of Utah, on Jordan Hill, known and described as the Kempton Mine or Lode, the Neptune Mine or Lode, the Neptune Tunnel, and the Moore Mine, and all interest of first parties in the Prince Albert Lode, said lodes, mines, and claims being the same prem- ises worked and known as the Kempton and Neptune Mines,

together with all privileges and franchises, appendant and appurtenant.

Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R Letcher, Clerk. By—— ——Deputy.

142 Mr. ROGERS: I will next offer in evidence an indenture of lease between William J. Harvey and Edward Balbach, Jr. parties of the first part and agents, and Junius F. Wells, party of the second part, dated August 1st, 1901.

There being no objection said lease was received in evidence and marked "Exhibit 16, J. W. C."

EXHIBIT "16."

This indenture, made August 1st, 1901, between William J. Harvey, of the City, County and State of New York and Edward Balbach Jr. of the City of Newark, in the County of Essex, in the State of New Jersey, parties of the first part, who are hereinafter called the lessors, and Junius F. Wells, of Salt Lake City, in the State of Utah, party of the second part, who is hereinafter called the lessee, Witnesseth:—

That the said lessor, for and in consideration of the rents, royalties, covenants and agreements hereinafter reserved, and by the said lessee to be paid, kept and performed, have granted, demised and let, and by these presents do grant, demise and let unto the said lessee all the following described mines and mining property situated in Bingham Canon, West Mountain Mining District, Salt Lake County, Utah, on Jordan Hill, more particularly known and described as the Kempton Mine or Lode, the Neptune Mine or Lode, the Neptune Tunnel and the Moore Mine, Lode or Claim, and all the lessors' right, title and interest in the lode or claim known and called as the Prince Albert, the said Lodes, Mines and Claims being the same premises worked and known as the Kempton and Neptune Mines; together with the appurtenances thereunto belonging To Have and to Hold unto said lessee or tenant for the term of three years from the date hereof, expiring at noon on the first day of August, 1904, unless sooner forfeited or determined.

And in consideration of the said demise, the said lessee does covenant and agree with the said lessors as follows, to-wit:

To enter upon said mines or premises and work the same mine fashion, in manner necessary to good and economical mining, so as to take out the greatest amount of ore possible, with due regard to the safety, development and preservation of the premises as a workable mine. To work and mine said premises as aforesaid steadily and continuously from the date of this lease; and that any failure to work said premises for the space of four months may be considered a violation of this covenant. To well and sufficiently timber said mine at all points where proper, in accordance with good mining, and to repair all old timbering wherever it may become necessary.

143 To allow said lessors and their agents to enter upon and into all parts of said mine for the purpose of inspection with use of all passages, ropes, windlass, ladders, ways and all other means of ingress and egress for such purpose.

To not assign this lease or any interest thereunder, and not to sub-

let the said premises or any part thereof without the written assent of the said lessors, and not to allow any person or persons except the said lessee and his workmen or tenants to take or hold possession of said premises or any part thereof under any pretense whatever.

To keep the leased premises free and clear of all liens and claims for liens for labor done and materials furnished for and in working said premises hereunder, and at his own sole cost and expense discharge or cause to be discharged of record all such liens or claims of lien as may be filed for record.

To not obligate or encumber the title of the lessor by any act or thing done by him or furnished to or for him under this lease.

To occupy and hold all cross or parallel lodes, dips, spurs, crevices or mineral deposits of any kind, which may be discovered in working under this lease, or in any tunnel run to intersect said premises or by said lessee or any person or persons under him, in any manner at any point affecting the premises herein demised, as the property of said lessors; with the privilege to the said lessee of working the same as an appurtenance of said demised premises during the term of this lease; and to not locate or record the same or permit the same to be located or recorded except in the name of said lessors.

To keep at all times the drifts, shafts, tunnels, and other passages and workings of said demised premises thoroughly drained and clear of loose rock and rubbish of all kinds. To pay and deliver to said lessors a royalty determined in the manner following, to wit: All marketable ores placed on the dump shall be by the lessee shipped to the best and most available market and there sold in open market for cash to the highest bidder and after deducting from the gross proceeds realized on sales of lots of such ores, the expenses of shipment from the dump, of concentration, when necessary, and of sampling, assaying and sale, the remaining proceeds shall be divided and paid as follows: 15 per cent. thereof on all said ores shall be paid to the lessors as on account of rental and royalty and 85 per cent. thereof shall be kept and retained by the lessee as his own.

To deliver up to the said lessors the said premises with the appurtenances and improvements in good order and condition,
144 with all shafts and tunnels and other passages, thoroughly clear of rubbish and drained, and the mine in all points ready for immediate and continued working (accidents not arising from negligence alone excusing) without demand or further notice on said first day of August, 1904 at noon or at any time previous upon demand for forfeiture.

And finally upon the violation by said lessee, or any person under him, of any covenant or covenants hereinbefore reserved, the term of this lease shall at the option of said lessors expire, and the same and the said premises with the appurtenances shall become forfeit to said lessors; and the said lessors or their agent may thereupon after demand of possession in writing, enter upon the said premises and dispossess all persons occupying the same, with or without force, and with or without process of law; or at the option of the said lessor, the said tenant and all persons found in occupation may be proceeded against as trespassers, or as guilty of unlawful detainer.

Each and every clause of this Indenture shall extend to the heirs, executors and administrators of all parties hereto, and to the assigns of said lessors; and as said lessors may elect to the assigns of said lessee.

In Witness Whereof, the said parties, lessors and lessee have hereunto set their hands and seals.

WILLIAM J. HARVEY. [SEAL.]
E. BALBACH, JR. [SEAL.]
JUNIUS F. WELLS. [SEAL.]

Sealed and delivered in the presence of:
CHARLES F. HICKEY,
Notary Public, N. Y. Co.
JOSIAH THOMAS.

STATE OF NEW YORK, *City & County of New York, ss:*

On the 24th day of October, 1901, personally appeared before me William J. Harvey and Edward Balbach Jr. signers of the above instrument who duly acknowledged to me that they executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal the day and year aforesaid.

[SEAL.] CHARLES F. HICKEY,
Notary Public, N. Y. Co.

STATE OF UTAH, *County of Salt Lake, ss:*

On the 6th day of November, A. D. 1901, personally appeared before me, Junius F. Wells, one of the signers of the above instrument, who duly acknowledged to me that he executed the same.

145 In Witness Whereof, I have hereunto set my hand and Notarial Seal the day and year first above written.

JOSIAH THOMAS,
Notary Public. [SEAL.]

My commission expires February 13th, 1903.

Indorsed 159928: William J. Harvey and Edward Balbach jr. to Junius F. Wells. Lease Recorded at the request of Stanley Ensign July 14, 1902, at 5 P. M. Book "E" of Mining Claims, Pages 334–37 Thomas Alston, Recorder, Salt Lake County Utah By John Holt, Deputy.

Filed in the U. S. Circuit Court, District of Utah; Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: I next offer in evidence memorandum of agreement between Junius F. Wells, party of the first part, and Enos A. Wall, party of the second part, and Heber M. Wells for himself and Thomas Kearns, third party, the purpose being to trace the

title of defendant, claiming that the second and third party succeeded to all rights in that lease.

Mr. SUTHERLAND: For that purpose we object to it because the lease expressly says it shall not be assigned without written consent.

The COURT: The lessors not being here making any objection the objection will be overruled.

To which ruling plaintiff then excepted.

Marked Exhibit 17, J. W. C.

EXHIBIT "17."

Agreement.

Memorandum of Agreement by and between Junius F. Wells, first party, Enos A. Wall, second party; and Heber M. Wells, for himself and Thomas Kearns, third party—all the parties of Salt Lake City Utah, Witnesseth:

The First Party, being the lessee of the Neptune-Kempton mining property of Bingham Canon, Utah, and holding an optional agreement to purchase the same from the owners for $50,000 agrees to, and does hereby sell, remise, transfer and assign to the said second party an undivided one half interest in said lease and option, and to the said third party a one fourth interest therein.

The Second Party agrees 1st, to pay to the first party two thousand dollars cash: 2nd, to take the general supervision and management, without charge for his personal services, of said property; to enter upon and operate the same in the most thorough efficient and skillful manner to produce the utmost possible profit, from the operation and exercise of said lease and option; 3d, to retain and employ at his own cost eminent and efficient counsel to advise with, prosecute and defend to the utmost, all matters and contests at law, which may arise in the operation and exercise of said lease and option, and to pay all costs and charges of litigation that may be thereby incurred.

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The Third Party agrees to aid and assist said second party, as may be arranged between them: and to keep the accounts of all receipts and disbursements of moneys, derived from the operation and exercise of said lease and option, with authentic vouchers therefor.

All the parties agree in good faith, 1st, to comply with the conditions of said lease and option and to unite in the operation and exercise thereof; 2nd, that the moneys agreed herein to be advanced and paid by the said second party shall become a charge against said lease and option, to be repaid to said second party out of the early proceeds of said lease; 3d, to divide the net profits derived from the operation and exercise of said lease and option equitably, as their respective interests may appear—*i. e.*, to the first party one fourth, to the second party one half, and to the third party one fourth of such profits.

In Witness Whereof the parties have hereunto set their hands and seals this sixth day of November, 1901.

JUNIUS F. WELLS. [SEAL.]
ENOS A. WALL.
HEBER M. WELLS.

Signed in the presence of
A. JESSEN, *Witness.*

Filed in U. S. Circuit Court, District of Utah, Oct. 21, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: I next offer in evidence a deed from Heber M. Wells and his wife Emily K. Wells, as grantors, to Enos A. Wall, as grantee, dated July 12, 1902, purporting to convey all their right, title and interest to this property.

Mr. SUTHERLAND: We object to that as immaterial, it not appearing that they have any interest in the property, unless it is expected to follow it up by showing they have some interest.

But the Court overruled the objection and the said deed was received in evidence, and marked "Exhibit 18, J. W. C."

Mr. Sutherland started to make an objection to Exhibit 17, but withdrew it.

147 EXHIBIT "18."

This Indenture made this 12th day of July, 1902, between Heber M. Wells and Emily K. Wells, his wife, of Salt Lake City and County, State of Utah, the parties of the first part; and Enos A. Wall of the same place, the party of the second part, Witnesseth:

That said parties of the first part for and in consideration of the sum of Five Thousand Dollars ($5,000) lawful money of the United States to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have granted, bargained, sold, conveyed and confirmed and by these presents do hereby grant, bargain, sell, convey and confirm unto the said party of the second part, his heirs and assigns forever, all of their estate, right, title, interest, claim and demand both in law and in equity, and in expectancy of in and to those certain mining claims, mining property and premises situate, lying and being in the West Mountain Mining District, Salt Lake County, State of Utah, described as follows, to-wit:

The Kempton Mine or Lode, the Neptune Mine or Lode, the Neptune Tunnell, the Moore Mine, Lode or Claim and the Prince Albert Lode, Mine or Claim, the said Lodes, Mines and Claims being the same premises and mining property worked and Known as the Kempton and Neptune Mines.

Together with all the dips, spurs and angles, and also all the metals gold and silver bearing quartz, rock and earth therein, and all the rights privileges and franchises thereto incident, appendant and appurtenant or thereunto usually had and enjoyed; and also all and singular the tenements, hereditaments and appurtenances thereunto

belonging or in anywise appertaining, and the rents, issues and profits thereof.

Also all estate, right, title and interest in any and all outstanding leases, contracts, bonds, options, agreements for sale, conveyance or other disposition of said above described property and premises; and any and all extensions which may now be agreed upon or hereafter secured of any lease or leases, contracts, bonds, options agreements of sale or otherwise over or concerning said above described property and premises, the intention hereof being to sell and convey unto said second party his heirs and assigns forever all of the estate, right, title or interest whatsoever both legal and equitable, whether in possession or expectancy, of said first parties of in and to said above described mining claims, mining property and premises.

148 To Have and To Hold all and singular the said property and premises together with the appurtenances and privileges thereto incident unto the said party of the second part his heirs and assigns forever.

And the said parties of the first part for themselves, their heirs and assigns do hereby covenant, promise and agree to and with said second party his heirs and assigns, that they have not made, done, committed, executed or suffered any act or acts, thing or things whatsoever, whereby or by means whereof the above mentioned and described premises, or any part or parcel thereof, now or at any time hereafter may be impeachable, charged or encumbered in any manner or way whatsoever.

And the said parties of the first part for themselves, their heirs and assigns covenant, promise and agree with said second party his heirs and assigns that Thomas Kearns has not and will not make any claim, demand in or to any part or portion of either or any of said above described property or premises; and will not in any way claim or assert any estate, right, title, or interest in or to said property or premises or any part or parcel thereof by virtue of any act, representation, contract agreement executed and entered into by said first party Heber M. Wells, acting for or purporting to act for said Thomas Kearns

Witness the hands of said parties of the first part this 12th day of July, 1902.

HEBER M. WELLS.
EMILY K. WELLS.

In the presence of
THOMAS W. SLOAN.

STATE OF UTAH, *County of Salt Lake*, ss:

On this 12th day of July, 1902, before me personally appeared Heber M. Wells and Emily K. Wells, his wife, the signers of the foregoing instrument and they and each of them duly acknowledged to me that they executed the same.

[SEAL.] THOMAS W. SLOAN,
Notary Public, Salt Lake County, Utah.

My commission expires March 5th, 1905.

Indorsed: 159930. Deed Heber M. Wells & wf to Enos A. Wall July 12, 1902. Recorded at request of Stanley Ensign July 14, 1902 at 5 P. M. in Book "P" of Mining Deeds Pages 590-1 Thomas Alston, Recorder, Salt Lake County, Utah. By John Holt, Deputy.
149 Filed in U. S. Circuit Court, District of Utah. Oct. 21, 1902. Jerrold R. Letcher, Clerk.

ADOLPH JESSEN, a witness produced by the defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Your name is Adolph Jessen?
A. Yes, sir.
Q. Where do you live?
A. Salt Lake City.
Q. What is your business?
A. That of civil and mining engineer.
Q. Are you a Deputy United States Mineral Surveyor?
A. Yes, sir.
Q. How long have you been in that business?
A. About twenty-five years.
Q. How long have you been a deputy mineral surveyor?
A. About the same time.
Q. In your professional capacity have you made surveys in the West Mountain Mining District and neighborhood and premises which are in controversy?
A. Yes, sir.
Q. You have made surveys of the Kempton claim?
A. Yes, sir.
Q. And Ashland claim?
A. Yes, sir; Ashland too.
Q. The Grizzly claim?
A. Yes; I have hunted for stakes on the Grizzly claim.
Q. The Fairview claim.
A. I have also looked for stakes on that.
Q. And the Northern Light claim?
A. Yes, sir, and also looked for stakes on that. I have looked for corner stakes on all those claims.
Q. I will ask you to look at the small plat which is here upon the blackboard and tell us who made that?
A. I made it.
Q. What did you make it from?
A. I made if from the records in the Surveyor-General's office, placing the claims as they were according to the location of United States mineral monument No. 1.
Q. Did you make any actual surveys in making it?
A. In making this one?—no, sir. This one is made entirely from the records.
Q. Is that a correct delineation of the relative locations of the

claim—the Ashland claim, the Grizzly claim, the Fairview claim and the Northern Light claim, as appears of record?

A. Yes, sir, according to their connections with the United States mineral monument only. Each one is put in place according to its connection with the mineral monument.

150 Q. Those relative positions agree with the calls of the Kempton patent?

A. Not entirely—substantially.

Q. How is it as to the Ashland patent?

A. The Ashland patent is practically the same thing, substantially the same thing—not exactly.

Q. Have you ever made actual surveys upon the ground to determine the discrepancies and inconsistencies between the plats and surveys as they appear in the Surveyor-General's office and the fact?

A. I have, sir.

Q. What are the discrepancies or inconsistencies, if any?

A. Well, the mineral monument connection, according to my survey, appears to be as a general thing twenty or thirty feet too short; that is to say, the claims actually lie twenty or thirty feet closer to the mineral monument than the connections with the mineral monument would indicate.

Q. Otherwise is there any discrepancy or inconsistency?

A. Not substantial. There is a difference all the time.

Q. Now in making these surveys upon the ground to discover discrepancies or inconsistencies what were you guided by?

A. I made a survey to determine the position of the claim from the ground, together with Mr. Fewson Smith, and we started at the post No. 2 of the Ashland claim. At that place a post was standing.

Q. You say J. Fewson Smith, that is the Deputy United States Mineral Surveyor that testified here yesterday upon the witness stand?

A. Yes, sir.

Q. The same party?

A. Yes, sir, that is the same man.

Q. Proceed?

A. We started at that place. Mr. Smith has had a great deal of experience in that immediate vicinity, and he stated to me that he thought that was the most reliable stake that was there. Now it so happens that the records of the Surveyor-General's office have a very good tie of the Ashland claim given; it says from post No. 1 the mouth of the tunnel bears north fifty-four west ninety feet, I think it is. I do not remember the exact distance. Of course the mouth of the tunnel is absolutely a permanent object. I tested that before, and I knew that the mouth of that tunnel substantially agreed with the position of post No. 2 as it stood and as Mr. Smith claimed was the proper place for it. The post was marked "U. S. L. 67 P. 2 W. C." It was an old aspen post six feet—about six inches in diameter, hewed. Previous to this survey I had dug up the post. Of course it was a very remarkable thing that the post should be standing twenty-five years. Previously I had dug up the post to see if it was

really standing the way it had been originally set. I found
151 this, that the stake had rotted off and fallen down and been set up again in the hole where it was. I think that was done at the instance of some lessors of the Ashland, and I found the post standing.

Q. What post was that?

A. That was post No. 2 of the Ashland claim. From there Mr. Smith and I in our joint survey went to post 3 of the Ashland, and we found it within a foot and a half of the actual place where it ought to be. I knew that the same thing was the case there, that it had been reset, but it was the original post undoubtedly and it was marked as it ought to be. We then proceeded along the northwesterly side line of the Ashland and ran on the course that the patent indicates, and when we came to a point about one hundred and fifty feet—I do not know exactly now; I can look it up and see—about one hundred and fifty feet southwesterly of the place where corner No. 1 of the Ashland ought to be, we found a post that was lying about eighteen feet to the southeast of our course, or practically east, you may say. The post was lying down, and there was no visible mark on it; there was no mark on it. It was undoubtedly an old post, but there was no mark on it. Mr. Smith stated to me that he knew that was the Ashland post No. 4. After that we went to dinner; it was about dinner time at that time. We went to dinner, and we did not pursue further the survey in that direction; we did not go back to that. The fact that Mr. Smith stated that was the post, why I thought that he would not agree to anything else; but that being so, Mr. Smith stated afterwards that he was mistaken in it, that that was the Northern Light post No. 4.

Mr. DICKSON: This post that was not marked?

A. The post that was not marked, and that he afterwards found the post over here, the Ashland No. 4 post, farther to the northeast.

(Answer continued.) Now then, we ran down and we establish from No. 2 to No. 1 and afterwards No. 6 post. We did not run to No. 5, and then Mr. Smith and I further re-established the Kempton lode and agreed upon the position as it lay. We did that practically from the Ashland, having established the Ashland. We practically located the Kempton, and it is given in the surveys of the Ashland as between post 1 of the Ashland and 3 of the Kempton, and we substantially established the position of the Kempton from there, and there was no trouble about that. I am convinced, from the position of the workings of the Ashland, that it has been located substantially right, I will not say exactly—as far as the Northern Light is concerned, I do not. I have been hunting for posts for it
and have been unable to find it, and likewise the Fairview
152 and the Grizzly. Mr. Smith and I do not agree upon the position of those claims at all.

Q. What efforts have you made to find the Grizzly and the Fairview and Northern Light posts?

A. Well, I run from a point where there is a claim called the Nemesis. It is a new location, by Colonel Wall. From post 5 of the Nemesis I run down this distance to a point where I ought to

find intersected post 1 of the Grizzly, where I ought to have intersected that post there. I looked around some for it—considerably for it, in some respects—and I did not find it. I also looked for the stakes of the Grizzly over here; I have not found them. I have not looked for that stake there. I looked for the stakes of the Ashland and Northern Light over here, and have been unable to find them on this end. I looked for posts of the Northern Light and did not find them on this end. I have previously stated we found posts 3 and 2, but not post 1. We, however, reset that post 1.

Q. With these explanations and reservations, that is a correct plat of the ground?

A. That is a correct plat of the way that the records in the office show the position of the claim in connection with the mineral monument connection.

Q. Do you know, from the record or otherwise, by whom the surveys of the Northern Light and Fairview and Grizzly were made?

A. Yes, sir.

Q. Whom?

A. Deputy Surveyor Thomas Davis surveyed the Fairview—taking them in order as they come, the Grizzly, the Northern Light and the Fairview, on the 14th of May, 1873.

Q. All on the same day?

A. All on the same day.

Q. The same man on the same day surveyed those three claims.

A. This same man—that was on May 14th, 1873—on August 29th the same man surveyed the Kempton lode, that is to say, he surveyed the Kempton lode on the 23d of April, 1875, two years after Joseph Golinski surveyed the Ashland claim.

Q. Have you seen their plat?

A. Yes, sir.

Q. The plat made by Mr. Smith?

A. Yes, sir.

Q. How much is that out from the calls of the patent?

A. I think Mr. Smith stated here—I was listening to it; I may not remember it correctly—that the Grizzly was out one hundred and twenty-six feet.

Q. Is that according to your understanding?

A. I understood him to say so.

Q. Do you know, looking at that plat, whether that is the fact?

153 A. I do not think it is; no, I do not think the Grizzly is where he puts it.

Cross-examination.

By Mr. DICKSON:

Q. Mr. Jessen, in locating claims upon this small map to which your attention has been directed, you consulted the notes in the Surveyor-General's office?

A. Yes, sir.

Q. And took the calls as to each claim and its connection with the mineral monument?

A. Yes, sir.
Q. Nothing else?
A. Nothing else.
Q. You ignored all other claims?
A. All others. I took the connection with the mineral monument only.
Q. And ignored all posts upon the ground?
A. Yes, sir.
Q. The permanent posts that might be called for in the field notes of the survey?
A. I took reference to nothing else but the connection with the mineral monument.
Q. You ignored every other call in the patent, whether for a post on the ground or a permanent monument, or what not?
A. Yes, sir; I took that and no other.
Q. Took the mineral monument only?
A. That is correct; only the mineral monument.
Q. And this is the result of that?
A. Yes, sir.
Q. And you know that is not correct as put upon the ground?
A. I think it is twenty or thirty feet—I don't think it is any more than that—out.
Q. Do you know that it is not more?
A. I will tell you how. Of course that twenty or thirty feet, I spoke generally; I did not mean exactly twenty or thirty feet.
Q. Or exactly fifty?
A. Yes, I mean fifty.
Q. You mean fifty?
A. Yes, sir.
Q. Some are out more than others?
A. Well, they may be a little. Yes, some are out more than others.
Q. Some are out considerably more than others. The variation between the distances called for in the field notes from a given point to the mineral monument is much greater, the variation much greater, than the call in other claims?
A. That is what I do not think.
Q. You don't think that?
A. No, sir.
Q. The variance is just the same in every instance?
A. I have got reason to believe it is something very similar.
Q. Do you know?
A. I do not know, but I think so because it is in reason.
154 Q. Do not the field notes of the Surveyor-General's office that you consulted of the survey of the Ashland tie to the Grizzly discovery?
A. To the Ashland?
Q. In these survey notes of the Ashland?
A. Tie to the Grizzly discovery?
Q. Ties to the Grizzly discovery, does it not?
A. It may. I do not know.

Q. Haven't you the notes of it?

A. I haven't my notes of it. It may, quite likely; I do not know.

Q. You cannot say that, taking that tie given in the Ashland patent to the Grizzly discovery, that the Grizzly discovery is one hundred and twenty feet from or nearer to the mineral monument than that call would place it?

A. I don't know that.

Q. You don't know whether that is so or not?

A. No, I don't know at all. I have not looked it up at all.

Q. Now in this little plat of yours—I suppose it is the same as all these other maps?

A. No, it is not the same.

Q. This is not the same as the other one?

A. No, sir.

Q. In the small map that you have here?

A. In this map there I have endeavored to lay the claims according to the best of my judgment where they belong.

Q. This map was also made by you?

A. Yes, sir.

Q. The larger one?

A. Yes, sir, made by me also.

Q. Now that map at the northerly end shows the end conflict between the Northern Light and Ashland different?

A. No, sir.

Q. And the small map—?

A. Don't either.

Q. Is exactly the same in that respect?

A. Yes, sir.

Q. And the plat in the patent shows a conflict at the northerly end substantially as shown in Smith's survey?

A. I know they do. I know that.

Q. The plat showing the ground—the plat accompanying the patent of the Ashland, which excludes the conflict with the Northern Light, and the conflict with the Grizzly shows the conflict to be between the Ashland and Northern Light and between the Ashland and the Grizzly to be just exactly as platted by Mr. Smith?

A. That is true. It shows a conflict.

Q. In other words, Mr. Smith's plat of these claims is correct, if the Ashland patent is correct?

A. No, the Ashland patent is not correct; it cannot be correct; the courses are entirely inconsistent with yours.

Q. Not with mine?

A. With itself. I beg your pardon. Calculating the intersections there, it is entirely wrong and inconsistent with itself.

Q. If you calculate the intersections?

A. Yes, sir.

155 Q. But if you take the Ashland patent and take the direct ties, the plat as given in this patent is absolutely correct?

A. It altogether depends upon what you take. In fact, there is a tie in the Ashland patent to post No. 3 of the Kempton between post

No. 1 of the Ashland. The post No. 3 of the Kempton, if you take that actually as a tie, it is impossible that post No. 4 of the Ashland and post 4 of the Northern Light can be in that position.

Q. In platting the Ashland on this other map you have ignored everything except the calls for the monument?

A. Yes, sir.

Q. And this corresponds with what you have there, does it not?

A. No, sir, it does not.

Q. Now you had post No. 2 in place in the Ashland?

A. It was in place; yes, sir.

Q. And you had post No. 1 in place?

A. Correct.

Q. And then take the next call in the patent as you went around; it was for post No. 4?

A. Yes, sir.

Q. When you were up in the forenoon in company with Mr. Smith you came across a post lying down which Mr. Smith stated to you he thought was No. 4 of the Ashland?

A. Yes, sir.

Q. You examined the post there at the time?

A. Yes.

Q. And there were no marks on that post?

A. No.

Q. And then you went to your dinner?

A. Yes.

Q. And that post was according to the calls of the patent—how far southerly?

A. I do not remember.

Q. About?

A. About one hundred and fifty feet, I should think.

Q. About one hundred and fifty feet, as much as that?

A. I think it was fully that.

Q. And that after dinner Mr. Smith told you he had found post 4 of the Ashland?

A. No, not after dinner. He told me that several days after.

Q. Sometime subsequently?

A. Yes, sir.

Q. Did you go out to see where it was?

A. No, sir.

Q. You never went back again?

A. No, I never went back. I had been there before looking for posts.

Q. Did he tell you where you could find it?

A. Yes, sir; about where he found it.

Q. How he found it, lying down?

A. I do not remember.

Q. Did he tell you it was marked post 4 of the Ashland?

A. That I do not remember.

Q. Did he tell you it was right near a mound of stones in which he found it once had stood?

156 A. He said that it was about in the correct position from what it should be if the post we found was corner No. 4 of the Northern Light.

Q. Didn't he tell you it was right by the mound of stones in which it had probably been originally placed?

A. I think he did.

Q. You never went back to verify it at all?

A. No.

Q. He told you if it were, if that mound of stones did mark the place, that there was a place in which that post was placed, that that post was substantially where it ought to be, according to that call in the patent, didn't he?

A. No, he did not tell me that—about the relative position between the two places?

Q. Yes.

A. He said that.

Q. Take course No. 3, the course and distance called for by the patent. The mound of stones will be just about where post 4 ought to be?

A. No; what he said was this, that the relative positions between the post 4 of these claims was, post 4 of the Northern Light, which he afterwards claimed the relative positions between that post and this post 4 of the Ashland was about right, but he said that the course of 4 on the Ashland was still short considerably.

Q. If you take the c[illegible]f the patent in accord with the distance from post 3 to 4, will it [illegible] correspond very closely with where Mr. Smith has placed post 4 of the Ashland on his map?

A. The truth of it is I do not know.

Q. The Ashland is the best identified claim up there, is it not, so far as natural objects were concerned?

A. The only one identified was that tunnel, to my mind. I would not give two cents to look for these posts set there. They might have been reset,——

Q. Taking this tunnel, you found post No. 2 where it ought to be?

A. —because set there two months before that.

Q. It was where it ought to be?

A. Yes, sir.

Q. Taking the mouth of the tunnel as a proper point, you found post 3 where it ought to be?

A. Yes, post 3 where it ought to be, according to that.

Q. Now did you take the call from the field notes of the Ashland survey—the call which referred to the Grizzly discovery?

A. No, sir, I did not.

Q. To see whether the Grizzly discovery was where it ought to be according to that call?

A. No, sir, I did not.

Q. You cannot say whether that is correct?

A. I cannot say whether it is or not.

157 Q. You cannot say whether the Grizzly discovery is placed on Smith's map just where it ought to be, according to that call in the patent?

A. I can say I do not think the Grizzly claim is anywhere near where it ought to be on this map; but as to where the discovery is in relation to the post, that I do not know.

Q. I am speaking of the Ashland post. Can you say that the Grizzly discovery placed upon Mr. Smith's map is not exactly where it ought to be, if the call in the Ashland patent for the Grizzly discovery is correct?

A. Well, I don't know; I cannot say that, because I don't know what that call is.

Q. You consulted those notes and understood that was the call in the field notes of the survey in the Suveyor-General's office?

A. I consulted it, but I did not notice that.

Q. Will you be kind enough, when you leave the stand this evening, to look and see if there is a call for the Grizzly discovery, and if that be true, if Smith has not got the Grizzly discovery exactly where it ought to be, and let us know in the morning?

A. Yes, sir.

Q. Now the Mountain Gem is not on this map?

A. No, sir.

Q. Were you not informed by Mr. Smith of the post standing at the southwest corner of the Grizzly, and didn't he give you the information by which you could go there and find it and the course and distance from the discovery?

A. I do not remember that he said anything about it. I was under the impression there was no post.

Q. Did you ever go there to look?

A. I went there to look.

Q. No, no; the southwest corner?

A. No, I did not go to the southwest corner.

Q. Didn't he tell you there was a post there?

A. I do not think he did; if he did, I do not remember. I do not want to deny that he did, but I do not remember that he did, and I was hunting for posts and trying to find them.

Q. Were you down at this corner?—I am mistaken in the corner. Did not Mr. Smith inform you that this corner, which would be the southeast corner of the Grizzly, that there was a post there and give you the tie of his survey to that post?

A. If he did, I do not remember it.

Q. If he did, would you be liable to forget it? It was within five or six weeks?

A. I do not think I would, because I was trying to find out where they were.

Q. What corners of the Grizzly did you go to?

A. I went to that.

Q. Did you go to any other corners?

158 A. Yes; this over here.

Q. You did not go to this one?

A. No, I did not go to that one.

Q. That claim was surveyed for patent only a few years ago?

A. 1873.

Q. The Grizzly?

A. Yes, sir.

Q. Did you go to this place on the ground? Did you go to where you thought the corner of the Grizzly ought to be?
A. I went to where I thought the corner of the Grizzly ought to be.
Q. Point out where you went to?
A. Yes, sir.
Q. Please indicate approximately where you thought that corner was?
A. Well, where I thought that corner was, that would be approximately there.
Q. How far?
A. That is to say, about twenty feet northeast, I think, of where that corner on this map is placed.
Q. About twenty feet northeast?
A. I think that was about the place where I went to.
Q. That is where you think the corner of the Grizzly ought to be?
A. Yes, sir.
Q. And that is where you went to look?
A. That is where I went to look for it. I used the call in the patent.
Q. You did not go any further in that direction?
A. I looked around—the brush is quite thick in that country—I looked around what I could, but I did not see any.
Q. What day was it that you were out there with Mr. Smith?
A. I do not remember; it was about two months ago.
Q. During the first week you were out there—during the first week that you and Mr. Smith were there, or within a week from the time you first went out there, did he inform you that there was a post at that corner of the Grizzly, corner No. 1, and give you his tie to that post?
A. I can only say this, that as far as the tie is concerned, of course if he gave me an absolute tie I would be likely to put it down in my note-book.
Q. Do you say that he did not?
A. I say that if he did I did not take it down, and if he did, I do not remember that he gave it to me.
Q. That is all you will say?
A. That is all.

Mr. HILES: I offer in evidence the small map referred to by the witness.

Mr. DICKSON: We make the formal objection to it that it is not identified sufficiently.

159 But the court overruled the objection, to which ruling the plaintiff then and there excepted, and thereupon said map was marked "Exhibit 19—J. W. C."

Redirect examination.

By Mr. HILES:

Q. Now I ask you to look at this map and state who made it?
A. I made it.
Q. What did you make it from?

A. Most of it from surveys which I made, which I executed myself. I made a part of it from the records in the Surveyor-General's office, and I made a part of it from information which I got from Mr. Smith.

Q. Now I call your attention to that part of the plat which purports to delineate the relative location of the Kempton, the Ashland, the Jordan Extension, the Grizzly, the Fairview, the Northern Light, the Jordan claim, and the Mountain Gem claim. From what data did you make these lines of these locations—the relative position of those claims?

A. In the first place, my survey commenced entirely with the location of the Ashland mining claim, because I thought that tie to the mouth of the tunnel was absolutely conclusive, and it agreed with the stakes as they stood, and Mr. Smith agreed to it that that was right, and consequently my survey from first to last commenced, in locating the claim—commenced with the Ashland.

Q. That is the official point?

A. Yes, sir; the foundation point for all the plans. The next thing Mr. Smith and I agreed to adopt a tie between the Ashland post No. 1 and the Kempton post No. 3, which is given in the Ashland survey. We agreed to adopt that because that substantially agrees with the patent for the workings that show upon the Kempton; consequently from that we agreed on the position of the Kempton, that is, the Ashland and Kempton. The next thing I located was the Northern Light. Now that I located entirely from the references in the Surveyor-General's office, which gives a conflict between the Northern Light and the Kempton. My reason for doing this was this: the Fairview, the Northern Light and the Grizzly were surveyed by a deputy by the name of Thomas Davis on the 14th of May, 1873, and the same man, the same deputy, on August 29th of the same year, located or surveyed the Kempton. Therefore I thought that this man Davis knew where the Northern Light was situated when he surveyed the Kempton. He says in his field notes that he placed stakes at the intersection of the two claims. They are not standing at all—no stakes, and no stake would be possible to stand, as they set them here, for twenty or thirty years—
160 twenty-nine years, but he says that he placed intersection stakes sixty-seven feet from post 8 of the Kempton. Therefore from post No. 8, which Mr. Smith and I established together, I put in that intersection stake, and from that followed the calls of the Northern Light patent as I found the stakes, which also agrees with another call in the patent of the Kempton, which calls for an intersection post on the end line of the Kempton sixty feet south of post 1 of the Kempton. That was the way I located the Northern Light. Now after having located the Northern Light, and following out the same reasoning that the man who surveyed the Northern Light on the same day surveyed the Grizzly and Fairview and ought to know the relative positions, I located the Grizzly and the Fairview according to the stakes of the survey that was made at that time and as the record shows in the Surveyor-General's office.

Q. I observe, Mr. Jessen, a conflict by your survey of the Northern

Light with the Kempton, and of the Northern Light with the Ashland?

A. Well, that is because Mr. Smith, if I understood him correctly to say yesterday, places the Northern Light according to this post 4 of the Ashland that he claims to have found over here, that I know that the Ashland survey is a connection from post 4 of the Ashland and a post of the Northern Light—well, he accepts, and from that he runs his line down south, according to the call of the patent, I presume, and he falls some thirty-three or thirty-four feet further east.

Q. Than you do?

A. Than what I do down here.

Q. I will ask you how the survey you have made agrees with Mr. Davis' survey?

A. It agrees exactly.

Q. Agrees exactly?

A. Practically exactly, and shows the same amount of conflict between the Northern Light and Ashland.

Q. The Northern Light and Kempton as Davis shows?

A. Yes, sir.

Q. And shows the position of the claims as his survey would show it?

A. Yes, sir.

Q. Now leaving that subject, I see upon this map various marks which purport to show surface tracings. I wish you would explain how you got those upon the map?

A. Well, I surveyed those. I connected them with the post of the Kempton and other stakes I had upon the ground, and while I do not pretend to say that that is an exact outline, because I did not run a transit around the big cuts, still that is substantially the way they are. These marks give substantially the outlines of the cuts.

Q. Of the cuts?

A. Yes, sir; cuts.

Q. I will ask you if you measured the distances of the cuts and excavations?

A. Yes, sir.

161 Q. And they are correctly laid down?

A. Yes, sir.

Q. What does this broad mark here represent? It is marked "Old excavation" on Kempton vein?

A. Surface excavation. That represents surface excavations, and I would state that the hole there is a very large hole, and is a hole that is caused by caving of the underground workings.

Q. While you call it a cut, the mining of it has evidently caused it to cave down?

A. Yes, sir.

Q. And the earth to sink?

A. No very great extent caused by that. There is a very old one there.

Q. Now this marking, what is its general direction on the Kempton?

A. Its general direction is east and west.

Q. Now I observe here marks which go more north and south. What do they represent?

A. They represent surface workings on what they call the Ashland fissure, starting in there, following the line here. Some of them are new and some of them are old.

Q. I see here a tracing which is marked "Ashland No. 2 tunnel."

A. That is an underground tunnel which is run by the Ashland.

Q. Where does that have its portal?

A. It has its portal outside of the Ashland No. 2 ground. I do not remember the name of the claim it was on. It runs west into the earth—it runs northwest into the earth for a distance until it intersects the Ashland vein, and then it runs practically on the Ashland vein all the way north of that.

Q. All the way along?

A. Yes, sir.

Q. I observe here also markings called "Strippings on apex." What are those?

A. Those are open cuts and trenches cut along on what is supposed to be the apex of the vein—the apex of the Ashland fissure.

Q. Are those correctly laid down upon the map?

A. Yes, sir.

Q. You surveyed them?

A. Yes, sir.

Q. You measured the distance?

A. Yes, sir.

Q. And they are correctly laid down upon the map?

A. Yes, sir.

Q. Here is a marking called "Old cut and cavings." What is that?

A. That is a hole of some old workings—a part of old workings. A part of it is undoubtedly an excavation, and part cavings from underground workings.

162 Q. You measured the distances on them?

A. Yes, sir.

Q. The distances are approximately correct, are they?

A. Yes, sir, correct.

Q. I see here a marking called "Large excavation," which appears to be on the line?

A. That is partly old cavings and excavations, and lately the United States Company has done quite a lot of work there.

Q. How far do these strippings extend along what is supposed to be the apex?

A. They extend about six hundred and fifty or seven hundred and fifty feet.

Q. From what point?

A. From this point here; that is, very near the end line of the Ashland.

Q. From the southwesterly end line of the Ashland?

A. Yes, sir; end line of the Ashland.

Q. About seven hundred feet?

A. About that, yes.
Q. And these markings which are upon that map were measured and made from actual surveys made by yourself?
A. Not all of them.
Q. What are not.
A. These outlines of these pits here. I had some of them, and Mr. Smith has very kindly furnished me the most of them.
Q. These are excavations which exist in the Old Jordan and Excelsior, and not in this disputed territory?
A. No, not in this disputed territory.
Q. They are outside of the disputed territory?
A. They are outside of the disputed territory entirely.
Q. What is the scale of this map?
A. Thirty feet to one inch.
Q. That is a correct scale?
A. Yes, sir.

Cross-examination.

By Mr. DICKSON:

Q. Was it your intention, Mr. Jessen, in preparing this map to indicate upon it all important surface openings?
A. What is what?
Q. Was it your intention in preparing this map to indicate upon it the principal surface openings?
A. Yes, sir.
Q. All of them?
A. All on the Kempton ground.
Q. Haven't you as a matter of fact left off many surface openings which should be embraced in that map?
A. Yes, I should say so. This map takes in a large territory.
Q. In the immediate vicinity?
A. Not in the Kempton ground.
Q. Now I see you have placed upon the map surface workings and openings that are not on Kempton ground?
163 A. Yes, sir. I got that from Mr. Smith—practically all that.
Q. And you have placed on it some underground workings?
A. Yes, sir.
Q. That is in their surface cast it is?
A. Yes, sir.
Q. That is down on the incline, isn't it?
A. I have not surveyed it.
Q. Look at your incline on the other map?
A. Right there.
Q. That is down in the incline?
A. No, I think it is on the surface. I have not been there.
Q. You don't know anything about that?
A. No, sir.
Q. Who directed you to put upon this map what is marked here "Stripping on apex." "Air shaft." "Workings on top of incline,"

"Open cut," "Old excavations on apex of Kempton vein," "Stripping of the vein, shaft and tunnel"?

A. Colonel Wall.

Q. And this part running out here to the south of the line of the Kempton was work done by the Kempton?

A. No, I think not. I was not there when the work was done.

Q. Was that put on by direction of Colonel Wall?

A. I do not know that he gave special instructions to put that on, but I had instructions to put on what was—what they considered necessary.

Q. What you had in your tracing. Now I call your attention to a map marked for identification "Exhibit T," and ask you if where I hold my pointer, which would be nearly at the corner of the Mountain Gem, does not represent the same work that you have on your map at this point?

A. About that: I should think it does.

Q. I call your attention to another piece of work which is found on Exhibit T southerly and in which elevation is given at 1276, station 30. You haven't that on your map, have you?

A. I have just a model of it.

Q. You had it on there, and have erased it, didn't you?

A. No, sir.

Q. You had it on there and took it off? Isn't it manifest to anybody that that was on there and has been erased?

A. I am not denying it at all.

Q. Why did you erase it?

A. Because I had not surveyed it, and I did not know exactly where it was. I was surprised that it had been placed there.

Q. Haven't you an outline of it precisely as it is on the plaintiff's Exhibit T?

A. Most emphatically I have, because it was traced right from that map.

164 Q. Why did you take it off?

A. Because I had no idea there was such important workings in there, and if I had not surveyed them I did not want to show them.

Q. That is the only explanation?

A. That is the only explanation.

Q. There are other large workings put on from our maps?

A. Yes, sir.

Q. Immense excavations?

A. Yes, sir.

Q. Have you seen them and know them to be correct?

A. I have seen that part of them.

Q. Know that they are correct?

A. I have no reason to think that they are not.

Q. Have you any reason to think that that is not correct?

A. No, sir, I have not.

Q. Why, when you took this off because you did not know that it was correct, didn't you take this off for the same reason?

A. I did not know—I have no reason to think that this was incorrect at all.

Q. Why did you take it off?

A. I have been telling you why I took it off—because I had not surveyed it myself.

Q. Then why didn't you take this off?

A. Because that was so far away it did not affect us at all.

Q. Didn't you take it off because there was ore in it at the grass roots and within a few feet of the end of your tracing? Isn't that why you took it off?

A. I had never been in it, and I do not know whether there was ore in it or not.

Q. Wasn't you told to take it off?

A. No.

Q. By no one?

A. By no one.

Q. When did you make that map and have it on there?

A. If you will wait a minute I will tell you. I was up in Mr. Smith's office and got some information about that one evening, and I think it was—I do not remember—

Q. I want your best recollection; when did you put that upon your map?

A. It was put on right in Mr. Smith's office.

Q. When, I say, about when?

A. Well, I think it was Thursday night; it might have been Friday night.

Q. When did you take it off?

A. The next morning.

Q. And you have given your explanation as to why you have taken it off?

A. Yes, sir.

Q. Why didn't you at the same time take off this surface cut which you put on from the same information?

A. I did not take that off because Mr. Wall wanted that on.

165 Q. Mr. Wall wanted that on?

A. He objected to my putting that on, but he did not object to my putting the other one on.

Q. You had not surveyed it; you took it from Mr. Smith's map?

A. I took it from Mr. Smith's map, and also got the connection in the Surveyor-General's office.

Q. Had you surveyed it?

A. No, sir.

Q. Then I call your attention again to plaintiff's Exhibit T to that place here from which apparently an incline runs and in which is found station 420. You have that on your map?

A. I have a part of it, I think.

Q. You put that on from Mr. Smith's map, didn't you?

A. Yes sir.

Q. And it is precisely on your map as it is on Mr. Smith's map?

A. Yes, sir.

Q. Did you survey it?

A. No.

Q. Why didn't you take it off?

A. Well, I didn't take it off.

Q. Why didn't you take it off? Why didn't you erase it as you did the other one?

A. Well, I had no object in erasing it at all. I was ordered to put it on from his map by Mr. Wall.

Q. You knew nothing about its correctness?

A. No, sir.

Q. Did Mr. Wall order you to put that on?

A. Yes, sir.

Q. You had the same information as to the correctness of that as you had of the correctness of this which you erased, no more and no less?

A. No more and no less.

Q. And you erased this because you did not know it was correct?

A. I did not say that. It was because I had not surveyed it, and because it was so close to our workings I did not want to show it, because I had not surveyed it.

Q. It was so close to your workings you did not want to show it?

A. No.

Q. Why didn't you go and make a survey of it since last Thursday to see whether Mr. Smith had it correctly on the map before you undertook to erase it from your own map?

A. In the first place, I hadn't time.

Q. Haven't you been out since last Thursday?

A. No, sir.

Q. When were you there the last time?

A. I came in Wednesday night.

Q. Now you cannot tell us then whether what you have in the incline at station 420 is ore or not?

A. No, I cannot tell that.

Q. Going southerly from that here is represented on Exhibit T another surface opening, isn't there?

A. Yes, sir.

166 Q. You haven't that on your map?

A. I do not think I have.

Q. These openings are about on a line of the Northern Light?

A. Here is where they would show.

Q. They show here on this map. Tell me how far, what the distance is according to Exhibit T between the most southerly apex tracings of the Kempton near the southeast corner—northeast corner—of the Mountain Gem and the easterly edge of the cut that you once had on your map and erased?

A. What is the distance?

Q. About fifteen feet, isn't it?

A. I should say something like that—fifteen or twenty feet. I do not know exactly.

Q. And it is about thirty feet across that work?

A. I can scale it.

Q. I do not care about having it scaled,—about?

A. About that.

Q. Running in a northerly and southerly direction?

A. Well, practically.

Q. Can you tell us how near the surface this ore body in this incline is, probably?

A. I do not know; I never was in it there.

Q. How far is it from the southerly edge of the ore body represented in that incline to the northerly edge of the surface cut?

A. About thirty-five feet.

Q. Now I call your attention again to what is supposed to be surface workings on Exhibit T, in one end of which is found station 503, and in which also Station T is found; you haven't that upon your map there, have you?

A. No, sir.

Q. Neither have you the workings shown on Exhibit T as going to the surface at station 5-4?

A. No, none of those.

Q. And these cuts here, on your map?

A. No.

Q. You haven't the Jackson incline?

A. I think that is put on, but that is put on from Mr. Smith's map again.

Q. Why didn't you take it off?

A. Oh, I put it on.

Q. That came to the surface, didn't it?

A. Yes, sir.

Q. Is it not represented on your map?

A. The Jackson incline—this is it.

Q. No, the map you have been examined about—your surface map. The Jackson incline comes to the surface in ore at the surface, does it not?

A. Oh, yes, the Jackson incline comes to the surface.

Q. And in ore at the surface?

A. I do not think it is shown on this map.

Q. Do you know? It is not shown on your map?

A. It is shown on that map here.

Q. I will come to that when you are examined about it. Why did you leave that off?

167 A. That is an oversight, is all I can say.

Q. You did intend to put it on?

A. Yes, I did intend to put it on.

Q. You knew of that and this other that I have called your attention to that you have left off? The one you put on, and afterwards erased, you have left off because they were too near your workings and you had not made a survey of them?

A. No, that was not the reason at all why I left them off—simply because I was not told to put them on.

Q. Didn't you say that you erased this one because it was so near to your workings, and you had not made a survey of it?

A. That is true. I thought it was important, and since I found out I had not surveyed it at all I thought I had better leave it off.

Q. That being your view of it, why did you put it on?

A. Well, I was up there and I was putting on what I thought was right; that is, the most of it.

Q. You thought it was all right to put it on Thursday night, and Friday morning you thought it prudent to erase it?

A. I erased that one thing.

Q. Weren't you furnished by the United States Mining Company more than a month ago with a blue print showing this very cut on it?

A. I guess it was. I was furnished with a blue print.

Q. And it showed that cut?

A. Probably; possibly it did.

Q. It did?

A. I cannot say for certain: I guess it did.

Q. You had that in your possession for about a month?

A. I don't know that it is.

Q. For about a month?

A. Yes.

Q. You have been out there making surveys repeatedly since that?

A. Yes, sir.

Q. There is no surface call here. Have you the notes from the Surveyor-General's office of the Ashland or Kempton, either one?

A. What is that?

Q. Have you the notes from the Surveyor-General's office of the survey of the Ashland or Kempton?

A. Yes, sir; both of them.

Q. Produce them?

A. They are on this map over here. That has the surface calls.

Q. No, I said the field notes?

A. No, I haven't the field notes or any of them.

Q. Assuming that in the field notes of the Ashland survey—who made that survey of the Ashland?

A. Joseph Golinski.

Q. I believe you said that was one of the best surveys made in the district?

A. No, I did not say anything of the kind.

168 Q. What did you say?

A. I said it was one of the worst bunged-up lot of field notes I ever saw.

Q. Assuming that in those field notes of the Ashland, at post—?

A. This post 3 of the Ashland, we found this call.

Q. I now return to the discovery post. Show me the discovery post of the Ashland?

A. The discovery post is not shown here.

Q. Can you show it on the map?

A. On the Ashland? I can show it on this one; it is shown here on that (Exhibit 20).

Q. On your new map?

A. No, this little one.

Q. Can you show it on this one?

A. No, sir; not there.

Q. Do you know about where the discovery post of the Ashland is?

A. Yes, I know about where it is.

Q. How far—point on this map?

A. It is about half way between post 3 and post 6.

Q. There is no question as to where the discovery point is of the Ashland, between you and Mr. Smith?

A. We never discovered that at all.

Q. Your maps agree in that respect?

A. I guess they do.

Q. Do you say on Exhibit Q at the place indicated is the actual discovery?

A. Yes, sir.

Q. That would be actually midway between the posts you speak of?

A. Yes, sir.

Q. On the center line?

A. Yes, sir.

Q. Will you be kind enough to fix that center line on this map by this?

A. It would be here.

Q. Oh, I want it accurate; locate the discovery with accuracy. How will you mark it, Mr. Jessen?

A. With a pencil there.

Q. Just at the side?

A. South side.

Q. What is the mark?

A. "Excavation in the cave."

Q. Now I read to you a call, which will show from the field notes of the Ashland survey as taken from the Surveyor-General's office, if you dispute it: "I now return to discovery post, from which a post at the intersection of Northern Light and Kempton mining claims bears North 23 degrees West, 36 feet distant." Show we where that would land you—the intersection of the Northern Light and Kempton—how far it would differ from your map?

A. Why, I cannot say how far it would differ. I know it would differ very much.

Q. Look at it.

A. The course is 23 west 36 feet to the intersection of the Northern Light.

Q. Does it say north or south—north 23 degrees west, thirty-six feet?

169 A. I haven't any protractor. I cannot do that now. It must be somewhere about here.

Q. It would be about here.

A. About here.

Q. Thirty-six feet?

A. It would be somewhere here.

Q. Scale it. You know the scale of the map (witness makes a mark)?

A. Something like that.

Q. That is about twelve inches long, is it?

A. Yes, sir.

Q. How far would that carry the side line of the Northern Light easterly of where you had it?

A. Sixteen or seventeen feet.

Q. The Kempton claim, according to the calls, don't show any closing at all; the field notes of the Kempton as surveyed for patent do not close in here—the lines do not close at all?

A. No, I do not know.

Q. The boundary lines—they won't come together, they won't join?

A. Possibly they won't; I have not tried it. They come together pretty close.

Q. Didn't you and Mr. Smith, when you were there making the joint survey, conclude that it was utterly unreliable, and you could not take it because the lines as called for would not enclose any space?

A. No, sir, not from anything that I know.

Q. And that therefore you would have to take the monuments upon the ground as controlling?

A. So far as I am concerned, I never heard it intimated. It is possible they do not close. I know they close very nearly. I have platted it time and again. I have not calculated it.

Redirect examination.

By Mr. HILES:

Q. I believe you want to make some explanation of some of your testimony?

A. I will state in relation to the erasure—here is another erasure; if Mr. Dickson will come here I will show it, just as plain as the other one. Now that I erased because I knew it was not right.

Q. Mr. Jessen, this erasure that you made was made of excavations or places outside of the Kempton ground?

A. Yes, sir.

Q. You did not undertake to nor agree to put on this map all of the workings or excavations that might be on their map??

A. No, I did not.

Q. Is it not a fact there are openings and excavations on Kempton ground that would not be on this?

A. That is true, because it is a claim worked for over thirty years.

170 Q. And there are excavations in Kempton ground you did not put on?

A. Certainly.

Q. Did not think it was necessary for the purposes of the case?

A. No, sir.

Q. Did Mr. Smith ever tell you that the Kempton claim as surveyed did not describe an inclosure?

A. If he did, I do not remember it.

Q. Do you know the fact to be that it does not describe an inclosure?

A. No, I do not. I knew the Ashland did not—that is, the conflict with the Northern Light, but I did not know that the Kempton did not.

(The witness was here temporarily withdrawn from the witness stand.)

By Mr. HILES: I offer in evidence this map referred to by the witness, marked "Exhibit 20—J. W. C.

There being no objection, the said ma[illegible] was received in evidence.

LEMUEL U. COLBATH, a witness produced by defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Your name is Lemuel U. Colbath?
A. Yes.
Q. What has been your business for many years past?
A. Mining.
Q. How long have you lived in Utah?
A. About 32 years; 32 years last month.
Q. You are one of the patentees named in what is called the Kempton patent?
A. Yes, sir.
Q. Do you know the Kempton mine, where it is located?
A. Yes, sir.
Q. How long have you known it?
A. Well my first examination that I made of that was in April 1873; it was the Neptune then.
Q. It was originally located under the name of the Neptune?
A. Yes.
Q. Or a part of the ground was?
A. Well, practically the same ground; not quite.
Q. There was a Kempton claim and a Neptune claim?
A. Yes, sir.
Q. Tell us how the Kempton and the Neptune became united if they did become united?
A. Well the Kempton was allowed to go to patent and the Neptune was allowed to lapse.

171 Q. The persons who claimed the Kempton made application for a patent?

A. Yes, sir.
Q. And you who owned the Neptune did what?
A. We protested.
Q. And then withdrew your protest?
A. Well we bought the Kempton out.
Q. And subsequently it was patented under the name of the Kempton?
A. Yes, sir.
Q. That patent was in 1875; how long before that did you know the ground?

A. Well I say that the first examination I made of the ground was in April 1873.

Q. Can you state what there was upon the ground then in the way of ore outcropping at the surface?

A. There was a very good outcrop at both the Kempton incline and the Neptune.

Q. An outcropping of ore?

A. Ore from the grass roots; it was mined out to the surface.

Q. You had interests there in that mine until what time?

A. Well, I sold out in the spring of 1874.

Q. In the spring of 1874?

A. Yes, sir.

Q. And you know that during that time it was mined from the surface?

A. Yes, sir; worked it and shipped ore.

Q. And shipped ore?

A. Yes, sir.

Q. The surface ore was shipped?

A. Yes; we shipped ore during the winter of 1873, the whole winter through.

Q. Do you know how deep the lode had been mined from the surface while you retained your interest?

A. Well, I could not exactly say but it was something over a hundred feet.

Q. A hundred feet from the surface?

A. Yes, sir.

Q. Do you know whether, or state if you know what dip if any the lode had?

A. Well, I think it was about 40° probably.

Q. 40°?

A. Well, yes, I should think about that; about 40°.

Q. From a horizontal?

A. Yes, sir.

Q. Now do you know whether you had got beyond the side line, the northerly side line of the Kempton on its dip before you left it?

A. Well, I should think so, yes; or very close.

Q. You got close to the northerly side line, either one side or the other before you left?

A. Yes; it dipped to the northerly.

Q. How often have you been there upon the property since that time Mr. Colbath?

172 A. Well, I could not tell how many times. I have been upon the ground a number of times during the first year or two; after that I was over it quite often. I could not tell you how many times I have been there. In 1879 I was there a number of times.

Q. What were the means by which the mine was worked while you were there?

A. Well while I was there in the start, we had a whim.

Q. A whim?

A. Yes, sir.

Q. Sink a shaft or incline?
A. An incline on the vein.
Q. Following the dip of the vein?
A. Yes, sir.
Q. Now, since you parted with your interest in 1874, when you have been upon the ground, have you observed whether there has been work?
A. Why, yes, yes, it was worked later on through the tunnel.
Q. What tunnel?
A. Called the Neptune tunnel.
Q. Called the Neptune tunnel? That is a large tunnel that starts and enters the earth some—what distance to the south of the south side line?
A. Five or six hundred feet.
Q. Five or six hundred feet south of the south side line of the Kempton mine?
A. I think so, yes, about that.
Q. And it has been worked through that tunnel?
A. Yes; it had been worked through that tunnel in 1879.
Q. Do you know whether that tunnel was designed for the purpose of working the lode?
A. Why, it was designed for the Neptune mining claim, the Neptune lode.
Q. To work and develop it.
(No answer.)
Q. Now I wish to ask you a question or two about this map?
A. I have seen that map; I don't know anything about it. I know the shape of the claim.
Q. I will ask you to look at this line which I trace with the pointer and see if that is approximately the shape of the Kempton mining claim?
A. I think that is the shape of it. You have not got the lines of the Neptune on there.
Q. No; the Neptune is not on. The Ashland is on here. Do you know anything about the Ashland?
A. No; I did not have that.
Q. Now, I will ask you to look at this tracing on the map marked Old Excavation on Kempton vein, and I will ask you if that is about the location where you commenced to work and take out ore on the surface?
A. I could not tell you now; you haven't got the incline marked here.
173 Q. What do you call that; a surface raise?
A. That is a surface raise.
Q. And here is the Kempton incline?
A. Yes; that is the Kempton incline.
Q. Here is the Neptune tunnel running in here?
A. Yes; I know.
Q. Do you observe a place marked on the map called the discovery point?
A. Yes, sir.

Q. Well, was it near the discovery point that you commenced to mine the ore?

A. Well, on the Neptune, yes, but of course the Kempton discovery cut was over off this way further 6 feet.

Q. That is what is called the McCarthy incline. Do you know anything about the McCarthy incline—do you know anything about the Neptune incline?

A. Yes, sir.

Q. Here is the McCarthy; and here is a mark representing the Neptune incline?

A. Well, then that was the Neptune discovery.

Q. Was it at this point that you commenced to mine ore at the surface?

A. That is where we commenced to mine ore.

Mr. DICKSON: I have no cross-examination.

ADOLPH JESSEN being recalled by defendant testified:

Direct examination of ADOLPH JESSEN.

By Mr. HILES:

Q. Mr. Jessen, I ask you to look at the large map upon the blackboard and I will ask you who made that?

A. I did.

Q. From what did you make it?

A. Mostly surveys of my own, and some I took from Mr. Smith's map.

Q. Now I refer you first to the relative positions of the Kempton and Ashland, the Grizzly and Northern Light, the Fairview and Mountain Gem, the Old Jordan and the Jordan Extension. I will ask you if in making and in laying down these lines indicating the relative locations of these claims you adopted the same rule and method that you did in the map and plat marked "Defendants' Exhibit 20"?

A. Yes, sir, I adopted exactly the same rule.

Q. This map, so far as that part of it is concerned, is a counterpart of the other?

A. Exactly.

Q. Now there are markings upon that map of what appear to be underground workings connected with the tunnel called the Kempton tunnel?

A. Yes, sir.

Q. Did you make those tracings?

A. Yes, sir.

Q. And laid them down on the map?

174 A. I laid them down on the map according to my surveys upon the ground.

Q. According to actual surveys upon the ground?

A. Yes, sir; most of them.

Q. Are the distances correctly laid down?

A. Yes, sir.

Q. And the relative positions of the various underground workings are correctly delineated?

A. Yes; I know that, so far as I surveyed them myself.

Q. I observe what purports to be tracings in other parts of the country—underground tracings. What were they made from?

A. The tunnel marked here "Old tunnel" I surveyed myself. The one marked "Main Excelsior," I also surveyed that myself. The one marked "Commercial tunnel" I also surveyed myself. This one marked "U. S. Tunnel No. 1" I surveyed the easterly portion of it—this that I am delineating, here to there. For the balance of it, I traced it from Mr Smith's blue print, which was furnished to me; and this I traced from Mr. Smith's blue print, and also this work here and that work there. I think all the balance of it here, from actual surveys of my own.

Q. I wish you would explain what these different colors there indicate with reference to additional levels of the mine, if they represent anything?

A. The bright vermillion color represents the Neptune tunnel and the workings on the level from the same. That is what is generally called the west drift across this way, and what is here called the east drift this way, together with some drifts in here. All the vermillion color is on that level—on the level of that Neptune tunnel. The green color is on the level called the Kempton tunnel—Upper Kempton tunnel, also a working of the Kempton mine. This yellow line here represents what is known as the Turnsheet level. It has no connection with the outside, only indirectly through the Neptune tunnel and through the Ashland No. 2 tunnel. It is situated seventy-three feet vertically above the Neptune tunnel. Now then, there is the Ashland tunnel that is colored in blue; it is above, belonging to the Ashland mines. There is a tunnel running in here and a drift this way, and then there is a great deal of stoping from that tunnel upwards towards the surface. The other Ashland tunnel is here called the Ashland No. 2 tunnel. It runs first northwesterly, and then it intersects the vein and practically follows the vein up to this point, where it makes connection with the Turnsheet level, which is about twenty-eight feet below it, and with what is known as the Copper Drift. That is a small drift; that is about nine feet, I think, below the Ashland No. 2 tunnel and also connects to a raise with the Turnsheet level; we call it here the CopperDrift. The Ash-
175 land tunnel and the Ashland No. 2 tunnel are connected by raises in one or two places—two places, I think, and some considerable stoping between the two; from the surface of the mine, from a point near the center of the claim, there is an opening which we call the air shaft. It goes on some fifteen or twenty feet to an ore stope that we call the Dunstan stope. From this Dunstan stope it proceeds east—what is really old stopes has been opened through, and you proceed down them about one hundred and fifty feet to the Copper Drift; it connects with the Copper Drift and through the Copper Drift with the Turnsheet level and also the Neptune tunnel; and then there is what is known as the Kempton incline, which commences at a point near the center of the Kempton

claim and goes in a northerly direction down, for about two hundred feet and connects with the Turnsheet level below. These, I think, are the principal workings upon the Kempton.

Q. Now the Kempton tunnel as it has been driven forward enters the mountain?

A. Yes, sir.

Q. And as it is driven in, the deeper it gets beneath the surface of the earth?

A. No, not exactly because there is a spur, because this ridge comes this way; the main mountain lies over here. There is a ridge or spur projects from it, running in this direction, and where it crosses under that ridge or spur it is deepest under the surface, and the distance to the surface decreases.

Q. Isn't so great?

A. No.

Q. I will ask you what is the lowest level of the main workings there?

A. In relation to what?

Q. To the surface?

A. The summit of Jordan Hill is an elevation,—In the first place, we adopt an elevation—I adopted an elevation that Mr. Smith had up there. It is, of course, I suppose, entirely arbitrary. He had an elevation of the mouth of the Neptune tunnel of eleven hundred and fifty feet, and for convenience' sake I adopted that and reckoned the elevations from there, either up or down, adding them going up and deducting them going down to this 1130 feet for the mouth of the Neptune tunnel. The highest point, at the summit of Jordan Hill where we crossed it, the elevation is given here as 1537; consequently that would be three hundred and eighty-seven feet.

Q. Beneath the surface?

A. Beneath the surface.

Q. To the lowest workings there?

A. Yes, sir.

Q. And this red that is marked upon the map are the lowest workings?

A. They are the lowest workings in the tunnel level.

Q. The next lowest are the yellow?

A. The yellow, called the Turnsheet level.

Q. And they are some seventy feet higher?

176 A. Seventy-three feet, I think, is the distance.

Q. The yellow levels are seventy-three feet above the lowest red level?

A. Yes, sir.

Q. Do you know if there is any connection between the lower Ashland tunnel and the upper Ashland tunnel?

A. Yes, sir.

Q. And from the upper Ashland tunnel, whether there is any connection with the surface?

A. There is a connection with the surface from the upper Ashland tunnel.

Q. What is the scale of that map?
A. Thirty feet to the inch.
Q. That is a correct scale?
A. Yes, sir.

Recross examination.

By Mr. DICKSON:

Q. What proportion of the underground workings platted on this map are the result of surveys made by yourself, speaking roughly?
A. All those that connect with the Neptune tunnel and Ashland tunnel.
Q. Is that all?
A. No. I surveyed those on here that are called the "Old tunnel." I do not know what it is.
Q. Can you tell me approximately about what proportion is from surveys made by yourself, and what from information furnished you from the United States Company's office?
A. Eighty-five per cent of it.
Q. About eighty-five per cent?
A. Yes, about that. I can show you which is and which is not.
Q. I wish you would scale from the mouth of the Neptune tunnel one hundred and eighty feet and see where that would bring you. Out from the Neptune tunnel there is driven in an easterly direction from the tunnel a drift, out some thirty or forty feet, not on your map, is there not, and that drift—first, isn't there a drift there one hundred and fifty feet in distance?
A. I want to explain that. I do not know just what you call the mouth of the Ashland-Neptune tunnel, because a great part of that tunnel is blown up from where it was originally.
Q. Where have you measured from?
A. I measured from where the blacksmith shop commenced, but it is open for a great distance further in there.
Q. From where the blacksmith shop is?
A. Commenced.
Q. When you got in one hundred and eighty feet you came to a drift that is driven off in that direction, do you not—that is, easterly?
A. I do not think so.
177 Q. If there is any such drift, you haven't it on your map?
A. If there is any such, I have not given it.
Q. You never observed a drift there right on the contact between the quartzite and the lime with ore in it?
A. No, sir.
Q. Upon which that drift is driven?
A. I have not seen it.
Q. And connecting with the works running off here easterly from the tunnel the distance I have named, isn't there a raise going up thirty feet that you have not got on your map?
A. If it is there, I have not got it on my map.
Q. Isn't it true that the drift and raise are in ore right on the quartzite contact with the lime? Isn't that why you left it off?

A. That is most emphatically not why I left it off. If it is there, I have not seen it.

Q. You have been through a great many times?

A. Oh, many times.

Q. Do you think, with the great number of times you have been through that tunnel and surveyed it, do you think you could pass by a work of that kind and a raise from it without seeing it?

A. Let me explain. A short distance from where you claim it to be I have indicated that something goes in a northeasterly direction.

Q. That is not the one I have reference to.

A. If it is there, I do not know it.

Q. Can you explain how it is, going in that tunnel the number of times you have and surveyed it, you could pass by a drift of that kind, if it were open, and a raise from it, and not observe it? You say that is on the contact, right on the contact between the quartzite and the lime?

A. Then I do not know where the contact is, but I think the contact is a great deal further in. There is some works on the contact where that is, but that is very much farther in; that is two hundred and forty feet in.

Q. That is not an answer to my question. We will leave the contact out.

A. If there is any at one hundred and eighty feet, Mr. Dickson, I have not seen it.

Q. Here is a raise going right here from the tunnel?

A. I have not seen it.

Q. How many times have you been in there the past three or four months—a dozen times?

A. A dozen times, I think.

Q. And at a distance of one hundred and eighty feet in you did not run through ore in which these workings are that are mentioned upon this map, if they are in view upon the ground?

178 A. If there is ore there, I have not seen it.

Q. Calling your attention to the incline on this map in which we find the stations number 420 and 421, why was that colored red—to indicate ore?

A. No, sir; it is just to make a different color; what I wanted to make was a contrast between the different levels so that each one could be distinguished.

Q. That is not on any particular level?

A. I have not surveyed that. That is a part of the things I took from Mr. Smith's map.

Q. When did you color it?

A. I colored all this——

Q. Why did you color that different from the body of the incline?

A. Because the incline itself is in solid lines, and those there are not open, and the inclines are colored.

Q. That is driven in solid lime?

A. No, I said in solid lines. That indicates an incline.

Q. Isn't the red color and the workings that connect or intersect intended to represent ore?

A. No, sir.

Q. Why was it colored then?

A. It was colored like the others, simply to distinguish it from something else.

Q. It was your own suggestion?

A. I did it myself.

Q. It was not suggested to you by anybody?

A. No, sir.

Q. The green level is how far above the tunnel level?

A. One hundred and fifty-six.

Q. How high above the green level, or how far below it?

A. That is the Sampson fissure.

Q. How far is that above or below the green?

A. It is not below the green; it is above the green.

Q. How far above the green is it?

A. Twenty-eight.

Q. Twenty-eight feet above the green level?

A. Yes. Oh, no; that is that raise on this side.

Q. Well, get it right?

A. That is that raise.

Q. I am speaking of the raise?

A. It is twenty-one.

Q. Twenty-one feet above the green?

A. Yes, sir.

Q. The raise from it comes to the surface?

A. That raise comes to the surface, but not this one.

Q. One of the raises connecting with that level comes to the surface?

A. Yes, comes to the surface.

Q. Comes to the surface in ore, does it not?

A. It comes to the surface in ore, yes, what they call ore.

Q. Now, the Copper drift marked on this map is how far below the green level?

A. Forty-eight feet.

Q. What is the difference in elevation between the Copper drift and the Ashland No. 2 tunnel? Which is the higher?

A. The Ashland No. 2 tunnel is higher.

Q. And how much higher than the Copper drift?

179 A. Seven and one-half feet.

Q. Pretty nearly on a level?

A. The Ashland No. 2, one in blue.

Q. How far is that above the Copper level?

A. Forty-eight feet.

Q. And the Turnsheet level is how far below the Copper level?

A. Twenty feet.

Q. What is the difference in elevation between the Turnsheet level and the Neptune tunnel?

A. About seventy-three feet.

Q. Give me again, if you please, the difference in elevation be-

tween the Turnsheet level and the west drift—the red level, west and east drifts?

A. That seems to be sixty-five feet at that point—at the point of the raise.

Q. The west drift being the lower of the two?

A. Yes, the west drift.

Q. How far beneath the surface is the most northerly working of the Kempton?

A. I do not know.

Q. Haven't you the elevation of these levels so that you could give it?

A. I can give it approximately by looking at that map. I think that it is nearer to it than——

Q. Well, do you know?

A. No, I do not; I could not answer that question.

Q. This is very much lower than that, isn't it? The surface immediately over this most northerly working of yours is much lower than this?

A. No, I think it is higher.

Q. You think it is higher.

A. No, I think this is the lower point there, right there.

Q. Can you give an approximation of how much? That is 1481.

A. Can is nothing but an approximation. I do not know what the distance is at that point; I have never traced the workings there.

Q. Give us some estimate?

A. I cannot do it.

Q. You have it there?

A. That is in another place.

Q. But you say approximately the same as the surface here?

A. I think perhaps it is.

Q. That is 1170?

A. That shows three hundred and eleven feet.

Q. Beneath the surface?

A. Yes, sir.

Q. At the most northerly point of your workings?

A. Yes, sir.

Q. Now the work marked in hatched lines lies easterly, and apparently connect with the Ashland tunnel. Those were in accessible stopes, were they, not of very great extent there?

180 A. They are not put on from actual surveys, showing actual dimensions—no, it could not be done.

Q. Give me the number of that station in the stope?

A. That is 210.

Q. The stope in which is found station 210, is that on the same level as the Copper level?

A. Yes, there is one stope there on that level; the one that is called the Lead stope starts from that.

Q. That is, the northeasterly part of the stope is on a level with the Copper level?

A. The lower part of the stope is on a level with the Copper drift.

Q. A drift goes in there and connects with that stope?
A. Yes, sir.
Q. And which way does this ore pitch or dip at the point of connection between the Copper drift——
A. I think it dips westerly.
Q. It dips westerly?
A. Yes, and northerly.
Q. Westerly and northerly?
A. Yes, sir.
Q. And how does the Ashland fissure dip?
A. Westerly.
Q. It stands pretty near vertical, does it not?
A. I do not know.
Q. At about what angle from a horizontal is the dip of the fissure?
A. It varies very greatly, but I should say that seventy degrees would come close to it. I have not examined it—not enough to give really a good opinion about it.
Q. Your map showing the Mountain Gem claim does not correspond with Mr. Smith's map, that is, the other map?
A. No, I see it don't.
Q. Did you put the Mountain Gem on from the posts on the ground?
A. No, sir.
Q. You found posts on the ground?
A. There was one post. There are posts on the ground.
Q. You found a post at the northeast?
A. Yes; it is laying down there, and has been rolling around there in that vicinity.
Q. Were not the posts in place?
A. No—laying down; it was laying down where I was.
Q. Both of them?
A. There is only one there.
Q. Only one post there?
A. At that point.
Q. Are you speaking of only one there when you were there?
A. Well, I have been there a good many times. I do not remember.
Q. Don't you know that Mr. Smith surveyed that claim for patent?
A. Yes, sir, I do.
181 Q. And didn't he tell you where the posts were placed by him originally?
A. Didn't he tell me?
Q. Yes.
A. I do not know whether he told me or not. I did not pay any attention to where the posts were.
Q. You knew that he made the survey?
A. Yes, sir.
Q. You knew he would therefore know where the posts were originally placed, and you did not ask him?
A. No sir, I did not ask him at all. I just took the record for it.

Q. Wasn't this post at the northest corner of the Gem standing when you and Mr. Smith, were there and made the joint survey?

A. I think it was standing before they started on that work.

Q. So that you knew where it was?

A. Yes, sir.

Q. Did you look for that post?

A. No, sir.

Q. You knew Mr. Smith surveyed the claim and placed a post there?

A. I did.

Q. And yet you were controlled by the call in the patent for the mineral monument?

A. Not for the mineral monument: no, sir. I was controlled entirely by his tie to the Kempton.

Q. By his tie to the Kempton?

A. Yes: he makes a tie from one corner of the claim to post 3 of the Kempton, and I was entirely controlled by that.

Q. You ignored the posts upon the ground?

A. I ignored the posts.

Q. Don't you understand as a surveyor, when you find posts upon the ground that are identified as original posts in their original position, that they are controlling?

A. No, sir, I do not understand anything of the kind. I understand the contrary—that they do not cut any figure at all.

Q. You do?

A. Yes.

Redirect examination.

By Mr. HILES:

Q. Mr. Dickson asked you if these stopes on the level of the upper left-hand tunnel were not inaccessible in many places. It is a fact, is it not, that upraises have been made through there?

A. Yes, sir.

Q. That old stoped ground?

A. Yes, sir.

Q. And these upraises are delineated upon the map?

A. Yes, sir, they are shown upon the map.

Q. And going from the tunnel level to the surface of the ground?

A. They go from the tunnel level to the surface.

Q. When were these upraises made from the lower to the upper Ashland tunnel through the stope?

182 A. Why, in the last month, I think. I am not sure: I was not there when it was done.

By Mr. HILES: I offer in evidence the map referred to by the witness marked "Exhibit 21—J. W. C."

Said map was received in evidence and marked as stated by counsel.

The witness, ADOLPH JESSEN, having left the witness stand, was recalled by the defendants, and having been duly sworn herein, further testified on oath as follows:

By Mr. HILES:

Q. Mr. Jessen, for information will you tell me how far beneath the surface this tunnel as marked "Old stopes" has been reopened?

A. Of course it begins nearly at the surface. This is an open cut from this point here in to where the yellow color commences. At that point I should think it would be about ten feet under the surface.

Q. Can you tell me how far that tunnel level, at the point marked "Cut," is beneath, or lower than the surface at the west end of the working marked "Stripping on apex?"

A. Yes, I think I can. This is on the same level; that is the mouth of the tunnel, where there is an elevation of 1341.1, and at that point there is an elevation of 1362.8, consequently the difference would be something like thirteen feet.

Q. Then you say that point is about ten feet beneath the surface there?

A. Yes. That is is a guess; I think so.

Q. It would be approximately twenty-five feet difference in elevation between that on top and this up here on the surface?

A. No, not with the surface. It will be that much less.

Q. This surface will be about twenty-five feet higher than that cut?

A. Than that cut—yes, sir.

FRANK C. MOREHOUSE, a witness produced by defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Your name is Frank C. Morehouse?
A. Yes, sir.
Q. How old are you?
A. 37.
Q. Where do you live?
A. Salt Lake City.
Q. What is your business?
A. Mining.
Q. How long have you been a miner?
A. Off and on 20 years about.
Q. Are you mining in the West Mountain Mining District?
A. Not directly.

Q. In what places have you mined in Utah?

183 A. In Mercur, Tintic District, Ophir District, Dry Canon, Clifton district, out in the Western and Fish Springs district; several districts out there and in San Francisco district in the southern districts of the State, Beaver Lake District, in the southern part of the State.

Q. As a miner do you know the difference between quartzite and limestone?

A. Yes, sir.

Q. And porphyry?

A. Yes, sir.

Q. Have you had occasion to observe how in different places the quartzite beds and limestone beds are laid down?

A. Yes.

Q. Have you had occasion to observe how fissures occur in the rocks constituting the crust of the earth?

A. Yes, sir.

Q. Have you ever had occasion to observe the manner in which these different strata are mineralized?

A. Yes, sir; I think so. I have had some experience in that matter.

Q. And observation. Do you know the difference between country rock and what is called ore?

A. Yes, sir.

Q. How many years altogether have you worked underground?

A. Well I could not hardly say. I have been in charge of underground work or worked for myself probably all told probably five or six years put altogether.

Q. Have you ever been foreman of a mine?

A. Yes, sir.

Q. In what district?

A. Well, I was foreman of a mine, superintendent of a mine in Dry Canon, in Clifton district, in Creiger and in Tintic and in Ophir; I don't know that there are others—yes, some down in the southern part of the State.

Q. Have you ever testified in mining controversies with respect to these subjects to which I have referred?

A. Once for myself.

Q. For yourself?

A. Yes, sir.

Q. But never under the employ of anybody else?

A. No, sir.

Q. I will ask you if you know the mine called the Kempton mine and the Ashland mine in this West Mountain Mining District?

A. Yes, sir.

Q. How long have you known it?

A. Well, about, I have known of them and I have been personally upon them since the—I knew them first about the 28th of last month.

Q. That is the first time you were ever upon the ground?

A. Well, I may have been upon the ground but I do not recollect that I was. I have been in the vicinity of the ground prior to that time but to know that I was right on that ground I could not say that I was.

Q. Have you ever owned claims in the neighborhood of
184 these?

A. Well, I have had bonds on claims in the neighborhood, yes, sir, been interested and am now in some property in—well not

right in that neighborhood—well, probably three quarters of a mile from there maybe.

Q. Have you examined mines and mining claims in the vicinity of this?

A. Yes.

Q. How often?

A. Well, about during last April. and March and some in February, I examined, I was over the ground considerable up near the Highland Boy and also the summer before that I was up there some. I have also examined ground to the southeast or northeast of this property over at Dalton and Lark and Brooklyn country.

Q. Now I will ask you Mr. Morehouse if you ever have in your business as a miner been employed to examine mining claims and mines and to report on them in the interest of intending purchasers, for persons who contemplated buying mines?

A. Yes, sir; I have.

Q. You have done that?

A. Yes, sir.

Q. How much of it have you done? How long since you commenced if you ever did commence?

A. About 1894.

Q. Now I will ask you if recently you made examinations of the Ashland claim and mine and the Kempton?

A. I have.

Q. You have made surface examinations as well as underground?

A. Yes, sir.

Q. What is the general direction of the strata, the dip of the strata if they have a dip, in what is called Jordan Hill?

A. Generally to the north, northerly, it dips northerly.

Q. What do the strata consist of?

A. Alternating beds of quartzite and limestone with porphyry intrusion and dikes and sheets in the bed, in the bedding planes and masses sometimes.

Q. Now confining yourself to, the Ashland claim first, what if anything did you observe on the Ashland claim in the way of a fissure and what was its direction and what was its extent in length and width?

A. I observed the fissure shown from the southwesterly end line by underground workings and strippings, from there up the hill upon the surface, the strike of which was northerly, east of north magnetic a little, for a distance of probably eight or nine hundred feet.

Q. Now calling your attention first to the surface indications of a fissure there, let me ask you how far south, if at all of the southwesterly end line of the Ashland claim you observed that fissure to extend.

A. Well, I could tell by referring to the tunnel, but something like a hundred feet I think or 50 feet from a station—which would
185 be marked on the other map, I guess it is the station 702 of the Ashland No. 2 tunnel southwesterly for about 70 feet.

Q. A place called station 2?

A. 702 on the lower Ashland tunnel on this map.

Q. That would be 70 feet south west of the southwesterly end line as marked upon this map (Ex. 21) and would be in what is called the Ashland No. 2?

A. Well, it would be more than that from the south end line. I was figuring that from where the tunnel intersected the fissure. Oh it would be 150 or 60 feet from the end line.

Q. You observed the fissure at that point?

A. Yes, sir.

Q. Was it in lime or quartzite?

A. From station 702 going westerly, about southwesterly, it was in quartzite.

Q. For what distance did you say?

A. For about sixty or seventy feet.

Q. What kind of material or strata does it then enter?

A. It entered limestone at about station 7, just before you get to 702 the limestone bed, the contact bed crossed the tunnel this way obliquely, so that the contact crossed probably a little bit west of 702.

Q. Well how far did you observe it to continue in the lime?

A. Well, it was timbered over head but you could see through the timbers occasionally and see the fissure in the roof, see the walls, apparent walls of the fissure upon the side.

(By Mr. DICKSON:)

Q. Is that in the upper Ashland tunnel?

A. This is the lower Ashland No. 2 at a point about 702 in that tunnel where it was not stoped overhead where you could see the work, you could see the fissure, but it was stoped overhead in places and some places it was timbered.

Q. What did you observe at Station 702?

A. There seemed to be, there was a fault there.

Q. A fault?

A. And throw.

Q. And how was the tunnel prosecuted with reference to the fault?

A. The tunnel run on bearing to the westward.

Q. To the eastward?

A. To the eastward, I mean, until it intersected the fissure again, and the fissure showed going through there. There was a drift driven along the line of the fault and the sides of the drift as far in as it went, the side next to the tunnel had ore along the side as far in as the drift ran, but the drift that way was not driven far enough in to intersect the fissure beyond the fault.

Q. Well, how then does the tunnel proceed and in what material?

A. The tunnel then proceeds in limestone where the sides can be seen and after you reach a point, well, somewhere about
186 700, between 700 and 712 or 13, the hanging wall side is largely ore. In places on the foot wall side or the east side of the fissure where it has been broken back a little ways, it shows the lime for that distance. After you get to station 713, the fissure or ore body begins to widen out, so that at station 714, it is all ore, you cannot tell what the country rock is and on to the end in ore, in the

fissure, at which point a drift is driven westerly about 18 or 20 feet in ore. The face of that drift is in limestone, a slip standing with ore against it, dipping about 60 to 65 degrees to the westward, to the westerly.

Q. Well, now, from there in the excavation how much further can you go in the fissure?

A. You go down a winze from the Ashland No. 2 at a point about 20 feet south of station 714 a winze going down nearly vertical in ore to the cross-cut from the Turnsheet level, the cross cut running north and south northerly and southerly is in the fissure and in ore at—the station is not marked—where there is a drift off from that cross cut—about 60 feet. From station 418 on the Turn-sheet level southerly a drift is driven easterly in ore in the fissure and is in the distance of 30 feet probably, at the end of which, not shown on the map where there are some drifts along north and south in ore in the fissure. From that point where you go down the winze south from station 714 in the Ashland No. 2 tunnel to where that drift is driven off you go through the ore in the fissure, you go on over where it is driven off north to the Turn-sheet level in ore in the fissure. At the Turnsheet level you can go easterly in the fissure in ore.

Q. For what distance?

A. To a point about 18 feet easterly, from station 416 of the Turnsheet level, about 18 feet from that and westerly in the Turnsheet level to the face. At the face seems to be the westerly limit of the fissure in ore. There is limestone in the extreme westerly face. The end of the tunnel is the end of that. It is in the nature of a sort of stope 12 or 14 feet across it and some 12 feet high or more rounded out in the end.

Q. What is the width of the ore in the fissure at this point on the Turn sheet level, that is to say, from the west wall if there is a wall?

A. Well, it would be about—let us see (Measures). It would be about a hundred feet.

Q. Now through there any excavations which were there in ore describe them from the Turnsheet level down to the end?

A. Down from station 419 is the Turnsheet level, what is marked on the map as a raise, goes down to the West drift to Station 515, West drift; it goes down on an incline of about 35 deg. in ore in the fissure. At station 515, a cross cut, marked cross cut, is
187 driven southerly on the map here. I don't know whether it is all shown or not, 70 feet or more, from station 515 to there.

Q. Is that a cross cut?

A. Yes; a cross cut; it runs back under the raise that you go down from the Turnsheet level to the West drift; the cross cut runs back southerly under it.

Q. 70 feet?

A. Something like 70 feet; probably more.

Q. Is that line marked cross cut approximately indicated?

A. That does indicate the cross cut.

Q. The cross cut?

A. Yes, sir; about 60 feet or a little over. That is in the fissure

and back from the—well perhaps 40 feet in, a drift driven east for 18 feet, about 16 or 18 feet through the fissure in ore and at the end there is a slip filled with talc and ore standing about 65 degrees, pitching to the west. From station 515 Turnsheet level, you go west in the fissure across here through ore about 12 feet beyond 517 I think it is.

Q. You said Turnsheet there; you mean West drift?

A. West drift. It would be about 12 feet from 517 to the end.

Q. That is about 70 feet or more below?

A. 65 feet or such a matter.

Q. I think Mr. Jessen said 70 feet below the Turnsheet level to the West drift?

A. Well——

Q. It is approximately that?

A. Well, somewhere along that.

Adjourned until 9:30 October 23rd, 1902.

Q. Now, Mr. Morehouse, proceed from station 515?

A. From Station 515 on the west drift the drift is driven, is going easterly in ore in the fissure, to 512 about. There is ore from 512 southerly in the drift and easterly in a short drift which raises up and for a distance of about half way between stations 511 and 512 in a cross cut marked cross-cut in ore to that point, the ore standing, pitching to the north or northerly about 35 degrees is the division between the ore and the limestone, between stations 511 and 512.

Q. Proceed.

A. The rest of this West drift level is in limestone.

Q. That is from what station?

A. 510 to 507.

Q. Now state, if you know, what is the width of the fissure vein at that point?

A. About 180 or 190 feet.

Q. Is that all in ore?

A. Yes, sir.

Q. Now how do you fix this point 512 as the easterly boundary of the fissure vein?

A. Yes, sir.

Q. How do you determine the point at which the fissure vein unites with the bedded vein, if you can determine it?

188 A. The way that I determine it is that the ore in what I call the fissure is, the structure of it is up and down conformable to the dip and strike of the fissure. The structure or flaking of the ore conforms to the plane of the fissure; sometimes the structure in soft ore is not so plain but wherever the ore hardens the fissure structure is very plain.

Q. Have you any ore which you took from the fissure which indicates this structure?

A. Yes, sir.

Q. As compared with the structure of the ore in what is called the bedded vein?

A. Well, I have samples from the fissure; I have no samples from the bedded vein.

Q. I wish you would produce them?

A. (Produced.)

Q. Now which of the specimens which are before you did you take from the fissure vein?

A. All of them.

Q. Explain how the structure of the ore indicates that it is in the fissure and not in the bedded vein?

A. These different pieces stand thus dipping slightly to the west, this representing northerly and southerly. They would not appear that way in the ground because the seams in ore would be filled with looser, softer ore, but that is the general structure of the ore in the fissure, standing about 60 to 70 degrees from a horizontal, with a dip to the north, or a dip to the west and the strike northerly and southerly.

Q. Well, when you come to the bedded vein what is the ore structure there?

A. Well, where the structure shows it is conformable to the dip of the strata, of the beds.

Q. Of the lime beds?

A. Of the limestone beds and it is inclosed within the limestone walls.

Q. State if you observed whether there was any slope or rake of the bedded vein towards the fissure?

A. Generally the vein structure of the ore body conforms to the dip of the beds but here it has a pitch, tends to pitch to the northwesterly more than the beds do.

Q. Northwesterly across the——

A. Somewhat across obliquely, across the beds.

Q. The dip of the beds?

A. Yes, sir.

Q. Well, now, coming back again to the lower Ashland tunnel, state whether you examined the workings from the lower Ashland tunnel for the purpose of ascertaining whether the vein continued towards the surface from the lower Ashland tunnel?

A. I did. At a point about 30 feet northerly from Station 711 in the Ashland No. 2 tunnel, a raise goes up to the Ashland tunnel.

Q. How far is that above the lower Ashland tunnel?

789 A. About 50 feet vertically; the raise is longer than that which goes up on the fissure.

Q. The raise goes up on the fissure?

A. Yes, sir.

Q. Showing ore?

A. Showing ore and some stopes and some porphyry laying with the ore bed generally on top of that, going down or up the raise or winze.

Q. When you get up to the upper tunnel what if anything do you see in the way of a fissure?

A. I saw the fissure exposed in the roof, which was more or less timbered, but some places no timber and stoped up, with stulls

standing across and posts and the fissure exposed in the roof wherever there was no timbering.

Q. Now is there any raise through the stopes towards the surface? from the upper tunnel?

A. There was a raise 30 feet northerly from station 604 in the Ashland tunnel and the raise went up to a tunnel above the Ashland.

Q. What was it?

A. Marked on the map "tunnel;" there is no station marked at the mouth of it. The mouth of the tunnel would be about fifty feet northerly from station 901. There is station 901 and there is the mouth of the tunnel.

Q. What in the way of a vein is shown at the mouth of that upper tunnel? Do you know whether that is called the Wheelbarrow tunnel?

A. It is called the Wheelbarrow tunnel.

Q. How is it marked here?

A. It is marked tunnel down through old stopes on ore.

Q. What is the color?

A. I guess it is yellow. I am not much on colors.

Q. Called the Wheelbarrow tunnel?

A. Yes; the Wheelbarrow tunnel. I went up that raise through or stopes. In places it was stoped on both sides along the strike of the fissure and other places the ore showed where it had not been stoped. There was some considerable porphyry near the top of the raise on the Wheelbarrow level and down the raise for well probably a third of the way down, porphyry overhead, and there was a porphyry roof for a part of the way and then a limestone roof, and the bottom of it was so filled with loose material that the wall—I do not remember that the wall could be seen, but where the ore was standing in the fissure it was very plain and conformed to the dip of the fissure; the fissure formation shows.

Q. How near to the surface is the Wheelbarrow tunnel after it enters the earth? at the end?

A. It is about, I should judge, about 50 feet.

Q. From the surface.

A. Vertically from the surface.

190 Q. Is there any opening from that Wheelbarrow tunnel to the surface?

A. There was but it is caved in; there was an opening from the end of the Wheelbarrow tunnel.

Q. To the surface?

A. To the surface at the mouth of the old Ashland tunnel, not on this map. The mouth of it shows on the other map.

Q. Well, now, coming to this map, did you examine the surface after examining the underground workings?

A. Yes, sir.

Q. What examination did you make, where did you commence and what did you find, what did you do and what did you see?

A. I saw a tunnel driven northerly from a point about 115 or 120 feet from station 905. My recollection is that the tunnel was

about 150 feet in length. It might have been longer, driven on the fissure; the fissure showing in the roof stoped upward. The face of the tunnel showed the fissure but at the end of the tunnel it inclined downward a little. Going up it was filled with loose broken material at the end; the fissure showed in the end of the tunnel and under the roof in places where it had been stoped so high that you you could not see the roof. Now I come from the mouth of that tunnel. There is above the mouth of that tunnel up on the hill here, about 70 feet northerly from the mouth of the old tunnel, a shaft, caved in, but the excavation is large and down to the filled bottom of it, it is probably 12 or 15 feet from the surface, and the fissure shows crossing the shaft, shows on the southerly side and on the northerly side of the shaft, and about on the east side it goes out to the foot of the shaft and shows under the easterly wall of the shaft where the shaft is not broken down too far back, and from there on the surface it is stripped.

Q. I will ask you before proceeding further, whether that is an old shaft?

A. That is an old shaft, evidently a very old shaft; it is on old shaft.

Q. Many years of age?

A. Yes, sir. No signs of any timbering or anything around it.

Q. Now proceeding from the shaft northerly, what did you observe?

A. There is a trench stripped along from the shaft northerly to station 907, a trench probably about a foot in width and anywhere from one to three feet in depth, may be four or five feet in places, showing a fissure, the same fissure in quartzite, and there is an ore streak showing all the way along in the fissure from station 907.

At station 907 there is a similar excavation apparently an old
191 one, a small one. Then the stripping goes on. There is no stripping there but the vein shows through from 907. The stripping is from 907 to about 20 feet northerly of station 909. From station 909 there is no stripping, but there are excavations marked "large excavations" and another excavation between and at the end of the stripping several little openings, showing a fissure. There is a tunnel, about 60 feet, or maybe 75 over to station 910—might be a hundred. I did not measure it. It is not on this map. It is on 910 southeasterly.

Q. What did you see?

A. There is a tunnel in there and there is a big cut at the surface showing the same fissure structure. The tunnel goes in southerly and then tends to the southwest. When about 60 to 70 feet there is a fissure running northerly and southerly.

Q. This fissure that you have described is running northerly from the old shaft?

A. Yes, sir.

Q. Have you examined that?

A. Yes.

Q. Is that recent work?

A. Yes, sir.

Q. I will ask you whether ore is exposed along that stripping or cut?

A. Yes, sir.

Q. All the way?

A. Yes, sir; all the way.

Q. Anybody can see it?

A. Yes, sir.

Q. Where the stripping ceases what are the appearances then as to the vein upon the surface?

A. After the stripping finishes—the stripping disappears and it is stripped over into the limestone a little ways. The upper line lying above this quartzite that I have described at the beginning, the stripping being in ore along to station 906; and over at the line of these old excavations is nearly the line of the contact of the upper quartzite and the upper limestone.

Q. Where is this upper quartzite that you speak of, whereabouts with reference to the top of Jordan Hill?

A. It is on the top of Jordan Hill and extends down on the southerly slope.

Q. How as to the northerly slope?

A. Southerly and northerly both; pitches down on the northerly slope and the beds come in on the southerly slope; you first encounter them going up.

Q. I will ask you to state as to the visibility of the fissure as it goes up through the quartzite; if it is visible as it goes through the quartzite?

A. It is visible but it is much smaller than in the limestone.

Q. That is, at the top of what is called Jordan Hill?

A. Yes.

Q. Now what was there on the other side?

192 A. On the other side of the quartzite, on the northerly slope over the summit of Jordan Hill a limestone body occurs. The stripping extends over into the limestone a little ways.

Q. On the northerly side?

A. Yes, sir.

Q. I will ask you to look at that picture and see if that is a fairly good photograph of Jordan Hill and of that locality?

A. Yes, sir; it is. That, is a picture of a portion of Jordan Hill.

Q. The portion that you are testifying about?

A. The portion that I am now describing.

Q. Which side of the mountain does that represent?

A. That represents the southerly side.

Q. Now the quartzite you have mentioned is on the top?

A. It is on the top of the hill; it shows very prominent on the top of the hill, and the bed of quartzite extends downwards to near the mouth of the old Ashland tunnel.

Q. Now you have gone over the top of the hill?

A. Yes, sir.

Q. And there you found, you say, the lime?

A. Lime.

Q. And what is the visibility, if any, of the fissure on the north side of the hill?

A. On the north side of the hill the fissure appearance is very wide; all of these marked "Large excavations" shows fissure structure as well as the mouth of the tunnel and works underground in that tunnel southeasterly from stake 910 in the large excavation and other cuts here showed fissure structure, showing it to be very wide in that belt of limestone.

Q. I will ask you if you know what is the relative width of the fissure in the quartzite and the limestone there, whether it is wider in the one than in the other?

A. Much wider; from only a foot, and in some places only a few inches in the quartzite, it widens out in the limestone so as I have said that it is in all probability in evidence for a hundred feet in width.

Q. Now where the recent stripping has ceased, I will ask you if there are old workings which show?

A. There are this large excavation here representing workings and some that are not shown on the map, between the part marked large excavation and station 909—I don't know, I cannot say as to the exact point that they are on this map, but they are somewhere in there between that and station 909.

Q. There are old workings at the end of the stripping that are not shown on this map?

A. Yes, sir; probably not right in line with the end of the stripping but off to one side or the other.

Q. Off to each side?

A. Yes.

Q. Do those old workings show ore?

A. Yes, sir.

193 Q. What is the distance from the southwesterly end line of the Ashland claim to the end of the surface tracing that you made?

A. I think I know what it is but to be sure I will measure it.

Q. I just want it approximately?

A. Well, about 800 feet.

Q. When you speak of ore in these old workings you mean ore at the surface?

A. Yes, sir.

Q. It appears at the surface?

A. Yes, sir.

Q. Now with regard to the other map what examination if any did you make if any with reference to the bedded vein. First I will ask you what examination did you make, if any for the purpose of determining the apex of what is called the bedded vein in Kempton ground?

A. I made an examination of the surface beginning at stake 904, and following the strippings on the surface along this line to station 100; the top of the Air shaft. I also examined the surface ground across from the Air shaft at station 100 over going easterly as far as

the cuts marked on this map, as being easterly from post 1 of Mountain Gem.

Q. What did you observe in the way of ore outcropping along that line?

A. I observed ore outcropping from station 904 to the Air shaft at station 400 to station about 30 feet southerly from the mouth of the Kempton incline station 400. The stripping was shown there and extended over, there was a stripping extending over to a point marked "Shaft" 15 feet about, from 10 to 12 feet, from stake 1 of the Mountain Gem northerly; the stripping was in ore, showing a vein, to a point what would be on this map the side line of the Mountain Gem, about 15 feet from the westerly corner post No. 1, from the post marking corner 1 on this map (Ex. 20).

Q. I will ask you if you discovered where the outcrop of ore ended?

A. It ended about ten or twelve feet along the side line of the Mountain Gem as shown on this map, ten feet or possibly 12 or 15 feet westerly from the point marked 1 of the Mountain Gem claim.

Q. State whether that is inside of the Kempton surface ground as delineated upon this map?

A. It is.

Q. How does it end there and how do you know it ends there?

A. The stripping extends along to that point and the rock is shown beyond and there is no ore. At a point in which the shaft is sunk there is ore standing, the strike of the ore being northerly and southerly, and has been stripped from the shaft down for 20 feet probably,
showing ore in fissure shape running northerly and southerly.
194 The tunnel marked "Tunnel" running into this shaft up near
what is called post 1 Mountain Gem on this map, runs in through limestone and cuts the ore I have described standing vertically, nearly up and down, and running northerly and southerly, and there is no ore shown beyond the point 10, 12 or 15 feet westerly of what is here marked post 1 Mountain Gem. These cuts beyond this tunnel are in limestone.

Q. Would it be called country rock?

A. Country rock, yes, sir.

Q. Now a part of this stripping that you have mentioned is new work?

A. Yes; it appears to be.

Q. What part of it?

A. All of this part from station 904, or a large portion of it; it all appears to be new work to the Air shaft from a point near to the Mountain Gem post No. 1, say a point 15 feet, or a point near there; and this work running this way and these tunnels and cuts and this stripping going westerly from post one to its end southerly from station 400 appears to be new work and in my opinion it is.

Q. What is the character of the other stripping?

A. There is shown beyond the point of stripping southerly from station 400 some outcropping of ore and the hillside seems to have been settled down and been excavated out so that it leaves a depression in the hill, and along the depression some outcropping of the ore is

left; the evidence of an old excavation is apparent from the Kempton incline about, over to—well in fact over to the Air shaft, or nearly to the air shaft.

Q. I will ask you how that excavation that you have last described is marked upon the map?

A. Marked old excavation on apex of Kempton vein.

Q. I will ask you if that has the appearance of having at some time been mined?

A. It has.

Q. In recent times or in old time?

A. It looks very old.

Q. In olden times?

A. It is old, yes.

Q. How far at the end here is the stripping driven into the country rock, if at all? And what you call the east end of the apex of the Kempton?

A. There is country rock from that side of this cut running northerly and southerly from that side for only a few feet to the end of the stripping but there is country rock between that side of that cut and the end of the ore, stripping beyond the ore shown in the stripping and is as I have already said country rock in these cuts; and at this point it intersects the ore standing nearly vertical and running northerly and southerly, and running along the side of that point marked shaft.

Q. I will ask you whether that appears to be a different fissure or formation from the Kempton?

195 A. It is in the same formation, but it is a different ore body or a different vein.

Q. I will ask you whether there is any evidence of ore of value in that?

A. Not that I discovered.

Q. What is it?

A. It is mainly an oxidized iron.

Q. You saw nothing of value?

A. I saw no lode or anything of value in it; it may carry some, lead silver and gold. I did not assay it.

Q. Now Mr. Morehouse, we will recur to this other map (Ex. 21). Now for the purpose of tracing what is called the bedded vein from the surface as described on this map, what examination did you make of the underground workings?

A. I went underground at point, station 100, the Air shaft, down the air shaft to some stopes at the bottom marked on the Map Dunstan stope, from these stopes I went through a stope passing station 101, 102 to station 104, also was at station 103 and from station 101 out to the end of the drift running easterly at station 104 there is a raise. I went down it on an incline, passing 105, to station 106 in ore, and old stopes from station 106 to 107 on a drift and level, practically at station 107 a drift is driven off to the easterly or southeasterly, which I went into, driven on ore; old stopes going up from the end of that, being stoped, in the end numerous openings going to that level, from station 106 to station 108 that are not shown on

this map, stopes going up in all directions, or several directions, irregular shaped holes apparently stopes. At station 108 there is a drift driven easterly or southeasterly for a distance of about 30 or 40 feet to the east to what is called the Sampson fissure, or what I call or we call the Sampson fissure as it is marked on this map, to a drift running, or that was driven—this drift was driven to a drift running northerly and southerly and is marked on the map "drift on Sampson fissure." I examined the fissure. There is a fissure standing nearly vertical, dipping slightly to the west, the strike of which is nearly north and south magnetic. Going back to station 108 to station 109, down through the incline for a short distance, from station 109 to station 110, through a drift, part of which was timbered, evidently having been stoped out both ways, old stulls and filled stopes showing. From station 110 I went down the raise to what is called the Copper drift; the raise goes down to the ore at the top fully ten or twelve feet, and then to a stope or old filled ground which is shown with stulls and old timber, through which a way has been sawed through the timbers and the drift taken out in order to make a passage way down through there.

Q. That is a place which has been mined out in other days?

A. It appears to have been; it was an old working.

Q. Old work and the ore taken out?

196 A. Yes, there is ore at the top of it and on the sides until you get down into the part that was stoped out. That goes down to the Copper drift between stations 201 and 202—I forgot the point upon the map (indicates). Going from station—a point between station between 201 and 202, I went westerly through the Copper drift to the end to station marked 210. Near the station westerly of 207 of the copper drift a winze is sunk to the Turnsheet level 20 feet vertically below the Copper drift.

Q. I will ask you from the time you entered the Copper drift until you struck station 210, what did you find with reference to ore?

A. Ore.

Q. All the way?

A. All the way.

Q. You may proceed; you then went from the Copper drift down to?

A. Down in the winze through here into the Turnsheet level.

Q. The winze is here?

A. Yes; here.

Q. To what?

A. Turnsheet level.

Q. How is the Turnsheet level marked on the map?

A. It is marked in yellow and marked Turn sheet level. From a point between station 414 and 415 where I reached the Turnsheet level on the tracings I have spoken of, I went west in ore to the face of the Turn sheet level and east in ore to stations four—Well, I went through the Turn sheet level right to the turn sheet. There is a connection between the Copper drift and the Turn sheet at station 200 on the Copper drift and the winze comes to the Turn sheet near station 410 on the Turnsheet level. I have been through the work-

ings from the Turnsheet level marked cross-cut running northerly and southerly and in the drift running easterly and northeasterly, north of east, to a drift there, a drift running westerly from station 506—that is wrong—from near station 408.

Q. How is that with reference to being in ore?

A. There is ore in part of it, and part of it is not in ore. There is some lime showing between 413 and 412 to a little beyond station 412.

Q. Well, did you proceed from there to the lower level?

A. I proceeded—there were other places where there is limestone shown on that level.

Q. On the Turn sheet level.

A. Yes, sir; on the Turn sheet level.

Q. Where?

A. There is some limestone between station 409. At station 308 there is limestone right there for a way; there is here some limestone and then at the end of the cross cut. At station 308 there is stopes filled stopes going both ways.

Q. Old workings?

197 A. Yes, sir; old workings. Also from station 414 there is a cross cut or drift driven out northerly,—northeasterly and in ore and stopes going both ways filled and ore showing on both sides of the drift. Near 408 a drift is driven westerly in ore.

(By Mr. DICKSON:)

Q. Westerly?

A. Westerly near station 408.

Q. What distance?

A. It does not go off from station 408 but the end of it would be about 30 feet from station 408, and back through the Turnsheet level to station marked 419 in ore, except for the lime I have described. I went down that raise in ore, in the fissure ore as I described yesterday.

Q. Can you say that the ore vein which you have described as you descended from the Kempton connects below?

A. Yes, sir; all the way.

Q. All the way in ore and is connected at the bottom?

A. Yes.

Q. With the fissure?

A. Yes; and is shown beyond the fissure on the West drift level westerly of it.

Q. Now I will ask you whether you entered the Kempton vein from any other point on the surface?

A. Yes.

Q. Where?

A. I went down the Kempton, I entered—from the mouth of the Kempton tunnel I went into the Kempton tunnel to the point of its intersection with the vein near station—15 or 20 feet southerly from station 4.

Q. At that point did you find ore?

A. Yes, sir.

Q. I will ask you where the portal or mouth of that Kempton tunnel begins?

A. It begins at station marked "0."

Q. State where that is with reference to the side line of the Kempton?

A. Well, it is just as shown here, outside of the south line of the Kempton claim.

Q. How far do you proceed in that tunnel before you intersect the vein, what distance?

A. The tunnel is irregular.

Q. Approximately?

A. About 80 feet.

Q. And there you encountered the ore?

A. Yes, sir.

Q. How then did you proceed with your examination?

A. Proceeded from the point of intersection with the vein to the southwest or southeast of station 4; a drift is driven easterly in ore, the face being in limestone as well as porphyry showing along the drift or tunnel. From station 4 to 5 and stations 6, 7 and 8, and from 8 to 12 through timbered ground. That is from 8 to 12 is through timbered ground and apparently stoped on the side. Near station 8 stopes extend, a filled stope appears going easterly from Station 8. From station 4 I went northerly to station 300.

198 Q. Does it show ore along there?

A. It shows ore all the way. From station 300 at which point the drift was driven both ways driven westerly and easterly in the vein stopes go up and down from a drift westerly in the vein. From station 309 down to 301 through an incline called the Rope incline in the vein and in ore with stopes driven off on the sides, in places drifts driven out, two or three places going down, little drifts going out at different places and some stoping done in ore from the top to the bottom. From station 301 to the bottom of the level is driven westerly which I followed to stake 303. There is ore, stopes going up from this level almost the entire length with the stope fillings appearing through the timbers. The workings on the lower side show ore along in the lower side. In the lower side there is a drift where it has not been stoped. From station 303 I went down through a stope to station, down past station 304 to 305. At station 305 this is all through ore, this stope here showing on both sides.

Q. That is from station 303?

A. 303 to 305. At station 305 a stope, called the Finn stope goes up to the south and a little easterly in ore and ore showing on the sides and at the top. The slope is filled with loose material. That is on station 305, is on the level of the Turnsheet level.

Q. About how far is that below the surface?

A. I have not figured it; I will tell you in a moment. I do not know what the elevation is at the top of the mountain. The elevation is shown at that point as 1240.

Q. Well, then where did you proceed?

A. I proceeded from 305 I went easterly to station 306 through ore, and stopped in the Sampson fissure.

(By Mr. DICKSON:)

Q. What station is it?

A. 306. From station 306 I went to station 409 on the Turnsheet level, ore for 12 or 14 feet from station 306 and then some ore and lime mixed to Station 409. From station 409 to 408 as I have described before and near station 408 I went through what is marked here Cave upper stope to station 407, being situated near about the center of this stope and a cave marked old stope here, to station 409 and through the stope and into what is marked Turn sheet level to station 406, on to 405, to 404, to 403. That is all in ore. In places; there is ore out from station 507 to the edge of the stope which is about—Well, I don't know, I don't know that that is accurate as to the shape of the stope. My recollection is from station 407 it is stoped over here for 25 feet or more, 20 or 25 feet, and here it would only show to be stoped over for a little less than that. There is ore along there from the edge of the stope out for 20 feet probably. This cross cut near station 406 is driven in ore. There is ore along
199 the bottom of the level, and is filled along the sides with loose material, but in places where I dug through it, I found ore; in places the ore is exposed. There is ore at this point marked stope between 404 and 403; shows ore wherever the sides appear; and all of the level from station near 405, from near station 405 somewhere is all in ore. I then went up went back to station 408 through the Turnsheet level, the portion that I have already described connecting down through to, the West drift there.

Q. So that these workings are connected with the workings which you last described, or which you have before described, when you proceeded up what is called the—?

A. Air shaft.

Q. They are connected. You say that it is the same body of ore?

A. Yes, sir.

Q. Now did you proceed from these workings down to this lower level or from some other workings?

A. I proceeded from these workings that I have just described at the Turnsheet level and down through a raise, going down from station 419 on the West drift down to Station 515 or from station 418 of the Turnsheet level—419 Turnsheet I mean, down to station 515 of the West drift.

Q. Then where did you go?

A. Well, I went out to the cross-cut in here as I have described and thence to 512 to a drift driven further east and one going south marked cross cut.

Q. Were they in ore?

A. Yes, sir.

Q. Now I see projected on this map what is called a cross cut running from 512 to 511; what is that?

A. My recollection is that is ore for about or a little more than half way from 511 to 512; and from this point between 512 and 511 there is limestone to station 510.

Q. When you say limestone what do you mean by that?

A. Well, I mean what I call limestone and what miners call limestone and what I have always understood and known to be limestone.

Q. With reference to country rock?

A. Yes, sir.

Q. You call it country rock?

A. I call it country rock, yes, sir.

Q. Going from 511 north I perceive that it intersects with a drift called "West drift." What is that?

A. That is the west drift from the Neptune tunnel, and goes through limestone at a point near station 510 there is a raise.

Q. What is that in?

A. Well, I did not go up the raise. It is said to be in quartzite; there is quartzite at the foot of it.

Q. You did not go up that?

A. No; it was not in condition to go up; there was no ladders in it.

200 Q. Now proceed from the upraise east on the West drift. That you say is in what?

A. Is in country rock, limestone.

Q. I wish you would proceed and state whether in passing through the West drift you examined the other workings in there?

A. No, sir I did not for the reason that the ground is caved and I could not get into the east drift.

Q. And old stopes?

A. No, sir; what is marked here lower stope I could not get into.

Q. Now where with reference to the end of this West drift and its intersection with that tunnel what is called Neptune tunnel is the Sampson fissure?

A. The Sampson fissure is near station 507. At the intersection of the West drift with the Neptune tunnel, that station is just a few feet, five or six or may be ten from the Sampson fissure, west of the Sampson fissure.

Q. I will ask you to state where the ore body or ore vein that you have described lies with reference to the Sampson fissure and the Ashland fissure that you have described, where the main body of it lies?

A. The main ore body that I have described lies in the Sampson fissure near the Ashland fissure and between the two and there is also down there an incline through the ground I have described. Further on that is on the east side of the Sampson fissure——

Q. I am speaking about the main ore body?

A. The main ore body is in between the Sampson fissure and the Ashland fissure.

Q. And there is some ore body to the east of the fissure?

A. Yes.

Q. Now I perceive a tracing upon this map called upraise?

A. Surface raise.

Q. A surface raise which seems to connect with the Kempton tunnel, which you have.

A. Yes; that is an upraise going to the surface from the Kempton tunnel, driven in ore, in the bedded ore body down to the Kempton

tunnel and comes to the Kempton tunnel at the point of the tunnel's intersection with the vein.

Q. Did you go through that upraise?

A. Yes, sir.

Q. So that this ore vein which is intersected by the Kempton tunnel at about 80 feet from the side line of the Kempton claim is traceable to the surface through the upraise in Kempton ground?

A. Yes, sir.

Q. Now are there any other places from the surface which you went down and examined the bedded vein?

201 A. There are none others that I went down on the bedded vein, no, sir, not that I recollect of, no, sir.

Q. But you say that the Kempton bedded vein and what you call the Ashland vein are connected by these workings in the way that you have described?

A. Yes, sir.

Q. In ore?

A. Yes, sir.

Q. Now Mr. Morehouse you have said that you know what limestone is, what quartzite is and what porphyry is?

A. Yes, sir.

Q. When you speak of them what is the character of your knowledge of them?

A. Well, I know them as they have, as miners call them, as, well—as miners call them and as they are called by men who know and who have had experience and as I call them from my experience.

Q. From the observation of miners?

A. Yes, sir.

Q. You would not undertake to describe the different kinds of limestone or rock according to their chemical composition?

A. No, sir.

Q. Or their ages?

A. No, sir, no, sir.

Q. When you speak of ore what do you mean?

A. I mean as it is termed in mining, as I understand it, from a mining standpoint.

Q. Containing what metals?

A. Containing iron, gold, silver, lead, copper and other precious metals, or useful metals.

Q. These ores you have spoken about contain those metals?

A. Well, I have not had them assayed, but I am certain they do.

Q. From your knowledge as a miner?

A. Yes; I know they contain some of them.

Cross-examination.

By Mr. DICKSON:

Q. A few preliminary questions Mr. Morehouse before we go into details. You found where you claim the apex of the Kempton vein that you are in a body of limestone?

A. I found that the vein is inclosed in limestone, yes.

Q. And then you followed that limestone belt a considerable distance easterly and westerly from what you call the apex of the Kempton vein?

A. Not a great distance.

Q. How far easterly of what you claim to be the easterly limit at the surface of the Kempton vein have you followed the limestone belt?

A. Oh, I have followed it 300 or 400 feet.

Q. How far westerly?

A. Approximately about——

Q. Of what you call the westerly limit of the apex of the Kempton vein have you undertaken to examine the limestone at the surface?

202 A. I have not tried to examine it at the surface westerly from there.

Q. Did you undertake to examine the limestone at the surface easterly at all of what you claim to be the easterly limit of the Kempton claim?

A. Only just by observation from a distance; I did not go over it.

Q. Did not go over it at all from east to west?

A. Oh, I went over it easterly from where the stripping ended probably I examined it along for I might say, for a hundred feet or such a matter; I would not say exactly but something in that neighborhood.

Q. Did you examine it with considerable care for that hundred feet or whatever the distance may be?

A. No; not specially.

Q. Just made a casual observation?

A. Yes; that is all.

Q. Did you follow it southerly on the surface from where you claim the Kempton claim apexes; did you follow the limestone southerly from there to the contact with the quartzite at the surface?

A. Yes, sir.

Q. Examine that surface with care?

A. Why, I walked over it and broke some rock along.

Q. I mean starting approximately at what you claim to be the easterly limit of the Kempton vein at the surface?

A. Yes.

Q. Starting from there and going southerly?

A. Yes, sir.

Q. Across the bed of limestone to the quartzite?

A. Yes, sir.

Q. About how wide do you find that belt of limestone to be, about 200 feet?

A. No; it is more than 200 feet.

Q. I mean at right angles to the bedding planes?

A. Well, I roughly figured it to be about 200—over 250 feet in thickness.

Q. Did you figure out its thickness at right angles to the bed, the dip of the bed so as to get it accurate?

A. Well, the slope, now mind you I did not figure it. Of course

it could be determined the exact thickness; I took the mountain slope which is not quite as steep as the dip of the bed and which is not quite at right angles to the dip.

Q. If the beds were dipping northerly for instance and at the surface the hill was eroded it would give the appearance of the limestone at that place where it is so eroded, it would appear to be wider than it actually was if taken at right angles?

A. That would appear to be the case but that is not the case where I examined it.

Q. Have you undertaken Mr. Morehouse and can you now undertake to state what the width approximately of the limestone belt is cutting it at right angles to the dip of that bed?

A. I should say it was somewhere around—it is a guess but it is from observation standing at the foot of it on the
203 quartzite and looking up the hill, I should say at a guess it was over 250 feet.

Q. Did you observe anywhere beneath the surface or undertake to determine its width; I mean by that to determine it accurately by figuring it out and taking elevations?

A. No, sir.

Q. At right angles to its dip?

A. No, sir.

Q. That is the only way you could determine its width?

A. If you find a place where it was level all the way through yes, sir.

Q. Where you could measure it at right angles to the vein?

A. Yes.

Q. That you did not do?

A. No, sir; I did not.

Q. You found this lime belt to be bounded on the southerly or south so far as you examined it easterly and westerly by a quartzite bed, did you not?

A. Yes, sir.

Q. And on its northerly side, so far as you examined it, it is bounded by quartzite?

A. Yes, sir.

Q. What are the minerals again that are contained in what you call the bed vein? Did I understand you to include iron in them?

A. Yes.

Q. If you find iron in what you call the bed vein, you would call it a part of the vein in your opinion, unmistakably?

A. If it had silver and lead and gold values with it, or any of them.

Q. Or if it had iron in such quantities as to make it valuable merchantably valuable, you would call it a part of the vein wouldn't you?

A. Yes, sir.

Q. You know that a great deal of the ore taken from the limestone belt to which I have directed your attention is sufficiently rich in iron to make it profitable to mine and ship to the smelters?

A. Possibly that is the case.

Q. Do you know whether it is or not?

A. I do not know of any place where they are doing that.

Q. I would like before going underground to interrogate you a little on the surface and for that purpose, Mr. Holden get us our surface map. There are some workings on it that this does not contain. While they are doing that and to save time, if you found in this limestone body or bed that I have directed your attention to, ore extending easterly and westerly and without interruption for a distance of three or four thousand feet, merchantable ore, unmistakable ore all the way you would not as a miner, if it was permissible to cut off one end of that, take one section in between the extreme limits and say that that should be treated as a separate vein notwithstanding there was continuous ore both ways beyond this section which you took out, would you?

A. No, sir.

204 Q. So, that if it turned out that in this belt of limestone starting from these ore bodies which you say are in the bed vein and keeping within the limestone belt, you go on continuous uninterrupted ore for 3500 feet beyond where you have found the termination of your vein underground, you would not for a moment think it would be permissible to cut off this western section and say that is a separate vein, would you?

A. No, sir.

Q. Now where do you find, according to your judgment the easterly limit of this so-called bed vein; fix it definitely?

A. Well, I could not fix it to an inch.

Q. Oh, no?

A. Well, it is approximately 15 feet along the upper side line of the Mountain Gem from what is marked here post 1.

Q. That is approximately 15 feet west?

A. Westerly.

Q. And along the southerly line of the Kempton?

A. No, sir; inside of the southerly Kempton line.

Q. How far north of the southerly line approximately?

A. About the same distance, 15 feet.

Q. At that point?

A. Somewheres there.

Q. That would be the point about where I put my finger?

A. Yes.

Q. Do you know who did this work running northerly and southerly just west of post No. 1 Mountain Gem?

A. No.

Q. Don't know who did it?

A. No, sir.

Q. It is in ore?

A. It is partly in ore, yes.

Q. It is in ore clear to its southerly face, isn't it?

A. There is ore to the southerly face, at the southerly face, yes.

Q. And that is across the side line of the Kempton isn't it?

A. No, sir; when I spoke of southerly, I meant, I was thinking of this way.

Q. I thought I directed your attention to that?
A. I did not so understand it; I was looking here.
Q. How far southerly in that line of work, running northerly and southerly and just west of post No. 1 of Mountain Gem do you have ore or unmistakable vein matter?
A. Possibly stripped as far down as that cut shows.
Q. As far as the cut shows?
A. Possibly the strippings run across that way and show up in the workings here and going downward. This was covered with some debris; that little pit run off that way to probably here went through there; I would not have any doubt there would be some ore running there in that direction.
Q. That would carry it across the south side line of the Kempton of course, that particular ore?
A. It went there, yes, sir; I would not swear that it did or did not.
205 Q. Now do I understand you to say that running out in a southeasterly direction from the point marked shaft in the workings that we have just been talking about, out to the point marked elevation 1312, that work is not in the vein?
A. That working is not in a vein or in ore but in this material limestone with oxidized iron for a distance of about five or six feet from the shaft going towards the mouth of that tunnel.
Q. And what is it in the face?
A. In the face of the tunnel?
Q. Yes.
A. The face of the tunnel is in at the shaft.
Q. I mean the mouth of the tunnel?
A. The mouth of the tunnel is in limestone and limestone up within five or six feet of it.
Q. What kind of limestone; unaltered limestone?
A. Well, I think it is straight limestone.
Q. Look like native limestone?
A. Yes, sir.
Q. Unaltered?
A. Oh, altered some.
Q. You have limestone in the bed vein have you not?
A. Yes.
Q. Just such limestone as you have here on both sides of it, either end?
A. Similar, yes.
Q. And still you call ore on either end of it a part of your bed vein with the barren lime between?
A. There is generally some ore between.
Q. Can you identify on Exhibit T this same work that you have been speaking about on the defendants' Exhibit 20?
A. Yes; I recall some of the work, yes.
Q. They have the same appearance?
A. Practically, yes. That is that tunnel coming into the shaft.
Q. Now I call your attention to an opening on Exhibit T running

southerly from surface station 29 and from which an incline appears to extend; were you in that?

A. No, sir.

Q. Whether that is in ore or not you don't know?

A. I do not know; I was not in it.

Q. Or whether it is in ore or whether the ore conforms to the bedding of the country, you do not know?

A. I do not.

Q. When you were going over this country as you told us that you did from the easterly limit of what you call the bed vein, going southerly to the contact with the quartzite, didn't you see that opening?

A. I did not go down that.

Q. Which way did you go?

A. When I went down over to the contact I usually went, in going to the mine and back from the boarding house, I usually went up by the mouth of this tunnel and around that way,
206 and when I came down I came from the Kempton tunnel right down by the dump which covered the limestone there in that direction.

Q. North of the place to which I am directing your attention?

A. Yes.

Q. This map is on a scale of 30 feet to the inch?

A. 30 to the inch; the same as ours.

Q. Yes. That being so it would be only about 30 feet from the point where you say you found the easterly termination at the surface of your bed vein to this working where surface station 29 is?

A. I think it should be more than that to surface station 29.

Q. No; to the opening in that station? It would be about 30 feet from there to here, would it not?

A. Yes, sir; I think it would.

Q. I do not want the exact distances?

A. It would be something like that.

Q. You did not see it?

A. I did not go down in that but I am satisfied I saw the opening at the top looking off from the upper Kempton tunnel.

Q. You did not think it important or at all necessary to go there to see whether there was ore there or not?

A. I did not go in there; I did not have time to go in all the workings. There was a great many works and there was much work around there I did not visit.

Q. I call your attention to another piece of work on this Exhibit T a little northwesterly and near station 419. Do you see the place I point to?

A. Yes, sir.

Q. Were you in that?

A. Yes, sir.

Q. You were in that?

A. I was.

Q. What did you find in it?

A. I found ore. I would not say that this is an accurate survey

of it but I found ore here, well probably somewhere near what is marked station level 1137.3.

Q. You found ore there?

A. Yes, sir.

Q. Ore conforming to the bed of the country?

A. That is from the Rip Van Winkle tunnel.

Q. It conformed to the bed of the country, didn't it?

A. Some did and some did not.

Q The ore that you found there lay with the beds, did it not?

A. There was ore in the bed and there was ore in the fissure.

Q. Where is the fissure?

A. The fissure run northerly; the fissure run northerly and the incline was sunk down on this, and went back into the fissure at station 420.

Q. I am speaking at the surface.

207 A. This is not at the surface; this is underground. All of this.

Q. This is marked here as a surface cut?

A. Well, I did not see that. I thought you were alluding to that Rip Van Winkle tunnel.

Q. No, sir.

A. No, sir; I did not see it.

Q. Did not go into that surface work?

A. I did not say I did not but I do not remember seeing it.

Q. So you cannot say whether there is ore lying with the beds there or not?

A. I went into several cuts, if you will allow me to explain.

The COURT: I question your right to go into this on cross examination. It seems to me you are trying to make out your case, on cross examination. There was nothing said on this subject on direct.

And thereupon defendants objected to this line of examination because not cross examination and the Court sustained the objection, to which ruling plaintiff then excepted.

Q. Coming now to the Ashland fissure that you testified about in direct can you tell us how far you have traced it upon the surface, from what point to what point?

A. From the end line of the Ashland southwesterly or southerly end line of the Ashland.

Q. Well, where to?

A. To a point somewhere about 911.

Q. Up here?

A. Yes; that is to say, that working shows a fissure. There is no work off in this direction. I found the fissure over here.

Q. You believe that the fissure that you find in the work on this Exhibit 20 marked old cut and in which the elevation station 1498 is found, is on the same Ashland fissure that you found at the southwest end line?

A. I think it is a part of the Ashland fissure. I think it is very wide there, and I think that is a portion of it that is exposed there.

Q. Do I lay my ruler now about in the direct line of the strike of that Ashland fissure?

A. Well, I hardly think so. I think the general strike of that figure is more there, something like that (indicating).

Q. Will you be good enough to mark the northerly end of it?

A. I would not attempt to lay it out on a sheet of paper as pliable as that.

Q. That would be approximately?

208 A. That might be the course I could not say; it should go right along there but I cannot say whether it does or not but I think the general course of it to be in that direction.

Q. And it had a dip in this direction?

A. In that direction.

Q. Have you any doubt that the fissure extends on beyond the point marked open cut?

A. I don't know that it does; I believe it does.

Q. You believe that it would continue?

A. Yes, sir; I do.

Q. Are these veins that you have spoken of, the bed vein and fissure vein in your judgment separate and distinct veins?

A. They are not perhaps separate but they are distinct veins, yes.

Q. Which is the older in your opinion?

A. I think they are about the same age

Q. Have you any idea as to whether one is older than the other?

A. No, sir; I have not.

Q. Not at all?

A. No, sir.

Q. Does the Ashland fissure, so called, appear so far as you have been able to examine it underground, to cut through the bedded vein thus indicating that the bedded vein is a later vein?

A. It cuts through some of the beds. It cuts through all the beds where I have seen the fissure clearly defined, where I could clearly identify the original fissure, yes, sir.

Q. Does it cut through the ore in the bed vein?

A. In places—the fissure?

Q. Yes, sir.

A. Yes.

Q. Leaving ore which is in your opinion referable to the bed vein both to the right and to the left of it?

A. In places, yes.

Q. Would not that indicate that the Ashland fissure cut through there after the bed vein was formed?

A. No, sir; not in my opinion.

Q. Do you think the bed vein was mineralized from the Ashland fissure?

A. I do.

Q. Entirely?

A. Yes, sir—well, I think that was one of the mineralizing agencies, that it was through that fissure that the mineralizing agencies were circulated and come out into the bedded vein.

Q. So that the ore that we find in the bed vein up here near the

surface you think came through the Ashland fissure solutions and were deposited in the bedding of the country?

A. Yes, for the reason.

Q. I do not care for what the reason is?

A. All right.

Q. I have no objection to your telling it.

(No answer.)

209 Q. Therefore you must have of necessity the opinion that these bed veins were formed at the same time? These so-called bed veins?

A. Quite likely.

Q. And from the same source?

A. Yes; I think so.

Q. How many veins do you have within the limits of the country that you have examined?

A. In the limits of the country that I——

Q. Testified about?

A. Testified to.

Q. How many different veins?

A. We have three fissure veins, that is that are named.

Q. How many that you call separate veins?

A. Three and the bedded vein.

Q. Three besides the bedded vein?

A. The beds are crossed by fissures running generally northerly and southerly the Ashland being one.

Q. The Ashland you call one vein?

A. I call that a vein, yes.

Q. You want to treat it and regard it as a separate and distinct vein in itself?

A. I don't know how it ought to be treated.

Q. In your opinion?

A. It is certainly a separate structure, the ore is of a separate structure and it had a different strike and dip to the ores of the beds.

Q. Well, you have in your own mind Mr. Morehouse a conception of what is essential to constitute a vein haven't you?

A. Yes.

Q. With that conception whatever it may be in your mind, I care not what it may be, do you regard the Ashland fissure as a vein that is to be treated as a separate and distinct vein from the other veins?

A. Yes, sir.

Q. And the bed then that you speak of, you also think should be regarded and treated as a separate vein where it maintains its bedded identity?

A. Yes, sir.

Q. The Sampson fissure; that is another separate distinct vein?

A. Yes, sir.

Q. And should be treated as such?

A. Yes, sir.

Q. And then the fissure carrying ore running northerly and southerly near post 1 of the Mountain Gem, is another separate and distinct vein?

A. Well, possibly I have not seen it traced far enough to determine whether it is a vein or amounts to anything or not.

Q. If it be a vein it would be a separate and distinct vein from the bedded vein?

A. Yes, sir.

Q. Although within a few feet of it?

A. Yes; it would be.

210 Q. Now what other veins have you within the limits of this territory that you think should be treated as separate and distinct?

A. The Kempton incline; the Kempton is on a fissure.

Q. A fissure?

A. A separate fissure.

Q. A vein entirely separate and disconnected and nothing to do with the Kempton vein?

A. Not disconnected by any means but joined to it that that place where you see——

Q. But to be treated as a separate and distinct vein?

A. The crack goes right through the bedding planes and right down through the beds with ore in the crack.

Q. Mr. Morehouse, is it a part of the bed vein or is it a separate and distinct vein?

A. It is a distinct vein. It is connected with the bed vein the same as the bed vein is connected with the Ashland and with the Sampson fissure.

Q. And can you not come up to the line where it is connecting with that Kempton incline in ore until you connect in the ore of the Kempton vein at the top again?

A. No, sir.

Q. You cannot?

A. No, sir—you do not at least.

Q. Are there not old workings that connect up there?

A. No, sir; not that I know of.

Q. That you have been in?

A. Not that I have been in, no, sir; no workings that I have been in or that I saw.

Q. We have now the Ashland, the Kempton, the Sampson and the Kempton incline, four veins?

A. No, sir; we have the Ashland, Sampson and Kempton. The Kempton incline is on the Kempton vein, on what is called the Kempton fissure.

Q. Is that a part of the bed vein?

A. No, sir; it is the fissure vein and it is connected with the bed vein.

Q. Is it a part of what you call the bed vein or being on the fissure is it a separate vein?

A. It is a separate vein in places it joins the bed vein; I don't know where you will draw that distinction.

Q. Where it is not in connection with the bed vein is it a separate vein?

A. It is a separate vein and fissure, yes.

Q. Now are there any others?
A. Shows in the Kempton tunnel.
Q. That same fissure?
A. Before you get in the bed, yes, in ore.
Q. In ore before you get into the bed vein?
A. Yes, sir.
Q. So it does connect with the——
211 A. It does not; that comes from the surface; that is the Kempton incline. That comes to the surface; that does not connect. The Kempton incline does not connect with the surface.
Q. But you find this same fissure in your judgment?
A. In my judgment it is in the line of the fissure, the Kempton fissure that is sunk on.
Q. 1336.6 is?
A. Yes, sir.
Q. What other veins?
A. That is all the other named veins I have seen in the territory I have been examined on.
Q. Have you found any others in the territory you have examined with a view to making up your mind as to what facts were true concerning these issues?
A. Well, I have examined other veins aside from these that I have described, yes, sir.
Q. Did they have any bearing in bringing you to the conclusion that you have reached?
A. They did.
Q. Where are they?
A. Over here in works that I have not been examined on.
Q. You found the Ashland fissure in what is marked No. 1 West drift on this Exhibit 21?
A. Well, do I find the Ashland fissure in their tunnel No. 1?
Q. Yes.
A. I found what I believed to be the Ashland fissure.
Q. Tell us where, please?
A. Station 793. But it varies from 55 to 70 degrees and I presume some places may be flatter than that.
Q. What is the steepest that you ever observed it?
A. I think not more than 55.
Q. Not more than 55?
A. No, sir; I think not; possibly.
Q. Dou you know that in order to carry the Ashland fissure where you testified it was in the West drift you have it, to the point near station 806 in the No. 1 level of the plaintiff's work it would have to have a dip as flat as thirty or thirty-five?
A. No, sir; I do not. I would like to make an explanation there, Judge. I said I found the fissure at 793 I found a fissured ore body at station 793 and I will say I found a fissure near station 826.
Q. Didn't you tell me that you found the Ashland fissure out here at Station 793?
A. I think that is in the Ashland fissure ore body, in the Ashland fissure, yes, sir. This country between these stations and that station

is fissured more or less all the way, between station 826 or the
212 tunnel near station 826 and station 793 where the tunnel crossed through there is a more or less fissured appearance and ore standing in fissured form and I identified that as being in the Ashland fissure that ore body because it bears the structure of the ore in the Ashland fissure above and has the same strike and dip.

Q. Mr. Morehouse if the ore body in the bedded vein was there before the fissure cut through the country—this series of fissures called the Ashland fissures, they are made up with a series of parallel breaks?

A. Yes, sir.

Q. Now if there was ore in the bedded vein, the ore or the mineralization of the vein had been completed, and afterwards the series of fissures or parallel breaks which you call the Ashland fissures were to cut through that ore body, would you not find the ore in just the condition that you illustrated with the samples precisely?

A. Well, I don't think the fissure could do that; I don't think the fissure would be that way at all.

Q. Do you know any reason why if the ore body was there and it was cut through by a series of parallel breaks that you would not have that appearance as the breaks went through the ore body?

A. The fissure might, it might tend to stratify the ore body up and down that way but not such a considerable distance out I don't imagine.

Q. It would depend upon the width of the system of parallel breaks?

A. Yes, sir; possibly.

Q. That would account for just the condition that you have there?

A. I don't think it would.

Q. Can you tell us why it would?

A. In the first place I don't think the crack was large enough to fracture and laminate that ore body that far up and down.

Q. Don't you have your fissured structure here 180 feet wide?

A. Yes, sir.

Q. You call the entire width of that Ashland vein 180 feet don't you?

A. I do.

Q. The Ashland fissure vein?

A. Yes.

Q. And that Ashland vein is made up of a series of parallel breaks?

A. Just such as I tried to illustrate with the rocks.

Q. And the ore in it bears that structure?

A. Yes, sir.

Q. And the breaks extend that far, do they?

A. Yes; they do.

Q. What is the dip of the fissures that you think you identified as the Ashland at station 793?

A. It is pretty hard to determine the dip because that at station 793 is in ore all solid ore and the structure of the ore is just as de-

scribed as being in the Ashland fissure and from which those
213 samples were taken and the ore is laminated and has the strike as it was above having a dip of about 65 or 70° at that point the strike being northerly and southerly at 10 or 12 feet from that station. I am assuming now that is on 793—I am assuming that this map is correct.

Q. It is a map made by your side?

A. Yes; well at 793 and it is an assumption of course, near station 793 there is limestone standing nearly vertical and ore joining it very near that point near station 793 over as far as you can go in that cross cut over toward 807, you go through ore extending in the fissure in the quartzite.

Q. There is a large ore body there.

A. There is a large ore body there, and this would be crossing, extending clearly defined from near station 793.

Q. Is not the ore body you found there in the position absolutely conformable to the bedding of the lime?

A. No, sir.

Q. You are sure of that?

A. I am sure of it.

Q. You have no idea I take it if you had the Ashland fissure at 793 or if you had a fissure at 793. Could you tell us, give us any idea of where it would come to the surface on top on any of the dips or the average of the dips you have observed on that Ashland fissure?

A. No, sir; I do not. I did not make any effort to determine anything of that kind.

Q. Now entering in at the mouth of what is marked the lower Neptune tunnel, when you get in a distance of about 180 feet from the mouth, did you observe a drift running off to the east on the tunnel level and raise also from it?

A. I don't know; I can tell you; yes, sir; 180 feet.

Q. Yes; about 180 feet?

A. About 185 feet; I noticed there was.

Q. That would be at about this position?

A. My recollection is Judge that the drift on this side running off here was filled.

Q. And in the drift running to the east of the tunnel and a raise from it?

A. There was a raise up.

Q. And a drift running easterly from it is there not?

A. No, sir.

Q. That point at all events is way back of the place you fixed on direct examination as the point where you come into the vein?

A. Yes, sir.

Q. Just point to the Court again where in that tunnel you claim to have intersected the vein?

A. I did not claim to have intersected the vein in that tunnel; I was not examined on that tunnel.

Q. Didn't you tell us where in that tunnel——

214 A. In the Kempton tunnel.

Q. You were holding your ruler on the Neptune tunnel?

A. The tunnel I went into was the Kempton tunnel.
Q. That is the one?
A. Yes, sir.
Q. You were not examined about that tunnel?
A. No, sir.

Mr. DICKSON: Would I be permitted to examine him on that.
The COURT: You can put him on as your witness when you reach your case.

Q. Are these workings here, the West drift and East drift and its branches on the same level as the Neptune tunnel?
A. They are not on the same level as the start of the Neptune tunnel. The Neptune tunnel has a grade it rises I think 27 feet as the difference between the end of the West drift and the mouth but that is all practically considered to be on a level.
Q. The difference in the elevation would be due simply to the natural grade of the tunnel?
A. Well, it is an unnatural grade; it is pretty steep for a tunnel.
Q. It is a part of what you call the tunnel workings?
A. Yes; on that level.
Q. And you did testify to those portions of that work?
A. I testified about there to there and down along there.
Q. Can you say whether in the Neptune tunnel the contact between the quartzite and the lime is not found within 185 feet of the mouth of the tunnel and ore on the contact?

Objected to by defendants as not cross examination.
And the Court sustained the objection. To which ruling plaintiff then excepted.

Q. You were examined about the Copper drift?
A. Yes.
Q. You found ore in that from station 301 in the Copper drift on the same level—you were examined about that portion?
A. Yes, sir; I was examined as to that portion. From station 301 to 302 and up to 305, that is a lower level, 303.
Q. It is in ore?
A. Yes, sir.
Q. Then coming to station 200?
A. I did not go through that way; You cannot go through that way; you have to go down to the Copper and Turnsheet level.
Q. You did not go there?
A. I did not go there from that direction.
Q. I don't care from what direction?
A. I got there; I was there.
Q. From station 200?
A. Yes, sir.
215 Q. Through 201, 202, 203, 204, 205, 206 and 207 you were in ore?
A. Yes, sir.
Q. All the way?
A. Yes, sir.

Q. Is 209 on the same level?
A. Yes, sir.
Q. You were at 209?
A. Yes, sir.
Q. In ore back to 210?
A. Yes, sir.
Q. And you were in ore in that same level at the point marked elevation 1267.6?
A. That is not the same elevation; it is six feet above. We were in ore.
Q. In ore, but only six feet above?
A. Yes, sir.
Q. Now how far is that level above the Ashland tunnel?
A. That is a little below the Ashland; it is below the Ashland tunnel a little below the Ashland No. 2 tunnel.
Q. Its elevation is between these two tunnel levels?
A. No; it is below both of them.
Q. Below both?
A. It is below the lower Ashland.
Q. How much lower?
A. Probably 5 or 6 feet; may be not that much.
Q. Is the ore that you have in the Copper level from this station which I have called your attention to from 301 to 209 and 210 in the bed vein or the fissure vein in your judgment?
A. A part of it is in the bed vein and a part in the fissure vein.
Q. It is all one continuous ore body; you are in ore all the way?
A. Yes, sir.
Q. And a part of the continuous ore body is to be referred to the bed vein and a part to the fissure vein?
A. In the way that I have explained the fissure structure.
Q. The only thing indicative of the fissure structure is what we have already talked about?
A. Yes, sir; that is the fact in places where the mineralization is not so heavy and great there is a well defined crack or fissure.
Q. From station 301 to station 209 is a distance practically of three hundred feet, isn't it?
A. I should think, well, that distance any how, yes.
Q. How much of that width of three hundred feet is fissure vein and how much bed vein?
A. That is a question that is pretty hard to tell because there is no connection from 301 over to the Copper drift.
Q. No, but have you any doubt in your mind Mr. Morehouse that the ore that you followed from 301 to 303 would if the workings were driven through on approximately the same level connect with the ore that you have at 200?
A. I have an idea that it would.
Q. That would be your judgment?
216 A. Yes; that would be my judgment.
Q. I should suppose it?
A. Yes.
Q. Now then assume that it would connect if work was driven

through there, how much of that width of ore that you have there, is in your judgment is to be given to the fissure vein?

A. That could not be determined because the Sampson fissure would cut across here about on that level at a point where not exposed and I don't know how much of it would belong to the Sampson fissure.

Q. Then if I understand you in this stretch here of 200 feet or more in length, a part belongs to the bed vein and a part belongs to the Sampson fissure and a part belongs to the Ashland vein but you cannot tell us how much approximately belongs to either of the three?

A. A part bears a bedded structure and conforms to the dip of the beds and a part bears the fissure structure and conforms to its dip but how much I don't know.

Q. How much of it you don't know. You have in that continuous length of ore a part which you think belongs to the bed vein; can you tell us how much?

A. I can tell you how much I found exposed as I saw it exposed.

Q. Roughly. I do not care to have you measure it on the map. About?

A. I could not tell the distance; I want to get at it somewhere near. From station 301 to 303 I consider to be in the bed vein.

Q. You have already answered you think that goes right on, that ore?

A. Yes, sir; I think it does; the Sampson fissure will cross it.

Q. So that you think between stations 301 if the work was driven and revealed ore as you think it would, the ore would be that of the Sampson?

A. I don't believe it would be all Sampson ore; I think a portion would be.

Q. A part would be the bed vein ore?

A. A part the bed vein ore.

Q. Now where did you reach the ore from this one and the same ore body that you think is referable to the Ashland vein?

A. I reached it on the Copper drift level, about westerly from station 207.

Q. How far westerly?

A. Oh, probably six or eight feet.

Q. In the neighborhood?

A. Yes, sir.

Q. And from there to station 207 where you encounter Ashland ore how far easterly are you in the bed vein?

A. From station 200 to 207 would be——

217 Q. How far—I am not confining you to any particular place; I am asking you to tell me how far?

A. How far?

Q. How far easterly from 207 are you in ore that is referable to the bed vein in your judgment?

A. Apparently from station 207 to station 200.

Q. To this?

A. Yes. And into station—well there is no station marked in there, but over there; that is over from the end of the copper drift.

Q. Here is station 207 on the Copper drift level; you think the ore there is in the Ashland vein?

A. Near to station 207; I would not say at it.

Q. And between 202 and 207 all the ore body is in the bed vein, and then all east- rather station 303 to 301 too is in the bed vein?

A. Oh, yes, that is in it.

Q. And somewhere between 303 and 200, if the work was driven through, the revealed ore would be, a part of it, of the Sampson vein any way?

A. Yes, sir.

Q. How much you could not say?

A. I could not say because it is not exposed on that level.

Q. How wide is this Ashland fissure, the greatest width that you have observed it when it was in the quartzite?

A. Probably two feet and a half or three feet, in some places.

Q. In the quartzite?

A. Yes, sir.

Q. And from that down to a mere seam?

A. Down to a mere seam.

Q. And when you got into the limestone and you found this banded structure or laminated structure, as you illustrate it, you found the greatest width of this that you call the fissure vein what?

A. Well, down, I presume on the Turn sheet level and on the West drift level I think the widest place about 180 feet which bears that structure.

Q. Then as you go across, follow it on the surface and come to the vicinity of the north line there it intersects another parallel lime belt, a lime belt parallel to the one that we have been talking about?

A. It intersects it near the summit of Jordan Hill.

Q. And where it intersects and passes out of the quartzite and into the lime, you find it again of great width?

A. Yes, sir.

Q. But in the quartzite it is narrow?

A. Yes, sir.

Q. As you go into the Ashland lower tunnel from station 702 to station 709, what is the width of the fissure?

A. Well, you get the fissure——

Q. What is the width of it?

A. Varying probably from two feet and a half up to as high as six or eight feet.

218 Q. That is all in the lime country?

A. That is in the lime country.

Q. And then from 709 to 711 there has been a fault?

A. Yes, sir.

Q. And at 711 you take up the fissure again?

A. Yes, sir.

Q. And at that depth the walls are exposed in the drift are they not? The walls are exposed, limestone walls of the fissure are ex-

posed until you get over to near station 713 somewhere between that and 712 and then the hanging wall is ore.

A. Yes, sir.

Q. And after you get beyond 713 and west both walls, both sides of the tunnel are in ore. Now from 713 through to its face. Indicate on that where the face on that is?

A. This point.

Q. What is the station number? It is northerly of station 714, is it not?

A. Yes, sir.

Q. You were in ore?

A. Yes, sir.

Q. How wide of course you do not know?

A. I don't know, no; I don't know how wide, that is to say at that point.

Q. Anywhere in that level?

A. I know how wide it is across near the face or at least how wide it appears.

Q. Now this stope in which we find the elevation of 1261.5; what are the dimensions of that ore body?

A. That ore body is connected with the tunnel and the fissure just described beyond station——

Q. What are the dimensions of the ore body so far as developed. How long northerly and southerly and easterly and westerly; and up and down?

A. In that stope.

Q. Yes.

A. There are two stopes, that is to say, over here is a big irregular excavation and at this point there is a hole through and another stope back in there; probably both of them would be 20 feet east and west or more, a little more probably 15 feet in length.

Q. And how far vertically, up and down on ore?

A. Well, there is ore up and down probably 8 or ten feet; may be twelve feet or more.

Q. Now we will go to the Turn sheet level you have ore at the place marked here Station between 403 and 404.

A. You have it where the sides of the stopes can be seen, yes, sir.

Q. And then coming west from station 405 you are in ore?

A. All the drift is in ore from about 404, or 5, somewheres along there.

Q. From 405 to 406 what is the drift in?

219 A. The drift is in lime and ore; some ore comes down in bunches apparently in the form of a sheet or bed, but there is ore irregularly along all the way.

Q. And lime?

A. And lime.

Q. And it is all in the bed vein in your judgment?

A. Yes, sir.

Q. From station 406 to 407 are you in ore?

A. You are a part of the time.

Q. And part of the time in limestone?

A. Yes, sir; part of the time limestone; that is to say, the ore comes in irregularly and from near 25 feet from station 205 to 407, then you are in ore to station 407, ore and stopes.

Q. Wherever you have ore on that level at the points I directed attention to, you have bands of lime?

A. We have limestone, yes, sir.

Q. And nevertheless you think that limestone is in your vein?

A. I don't know that it is in—I do not consider it in the vein; I call it limestone.

Q. Did you ever see or know of a vein of ore that did not have barren places in it?

A. I never did, no, sir.

Q. As a rule more than seventy per cent of the contents of any vein with which you are acquainted is barren?

A. Well, I would not want to say that, no.

Q. Will you say more than 50 per cent?

A. It depends on how long the veins were.

Q. Any vein you have been acquainted with?

A. I have seen a vein one location or claim 1500 feet long with a solid body of ore for a thousand feet.

Q. That is rather rare?

A. Yes; rare.

Q. Speaking of the mines that you have examined and are familiar with, isn't it true that vastly more than fifty per cent of the vein has been barren?

A. Well, that might be true and might not; I would not want to say—I would not want—probably that is the case.

Q. Probably that is the case?

A. Yes, sir.

Q. Well, coming to station 407 in this same Turn sheet level through to where it is intercepted by the Sampson, are you in ore from station 407?

A. You are in an old stope but it shows ore going down. You are in the Sampson then to 408.

Q. And then from 408 in ore all the way?

A. Not all the way. From 408 out to 409 for 25 feet or more, probably somewhere around there, you are in ore. You are in limestone until you get to station 409 and then in ore.

Q. So that you have a stretch of limestone there of 20 or 30 feet?

A. 20 to 30 feet.

220 Q. And then you come into ore again at 409?

A. Yes, sir.

Q. On this same level?

A. Yes, sir.

Q. And following from station 409 around to 411 are you in ore.

A. Yes.

Q. And from 411 following that drift back to 414 you are in ore?

A. There is a little limestone right in there between 411 and 412, 13 and 14.

Q. A little belt of limestone?

A. Limestone.

Q. Belt?
A. Yes, sir.
Q. You call that too in your vein?
A. No; I do not call that a vein. I call it in the foot wall country of lime; not a part of the vein.
Q. What is the extent or limit of lime that you have here between 411 and 412; what is the widest piece of lime? Between 411 and 412?
A. What do you mean by the widest piece.
Q. As cut by that level?
A. Well, the level is in limestone between 411 and 412 and my recollection between 412 and 411 the limestone there probably would cut back——
Q. All the way did you say that was in ore and lime?
A. I did not.
Q. Is it all lime from 411 to 414?
A. No.
Q. Is it all lime from 411 to 412?
A. No, sir.
Q. There is some ore?
A. Some ore.
Q. Lime east of that and west of it?
A. No, sir; from 411 to 412 my recollection is the ore is on the left hand side as you go west, on the hanging side.
Q. Ore continuously?
A. For some little distance past 411.
Q. Have you in 411 any place where the whole drift, between 411 and 412 where the whole drift is in limestone?
A. Yes.
Q. How long a distance before it gets into ore again?
A. Oh, probably 10 or 12 feet, 15 maybe.
Q. So that in going on in that work finding it in ore and then coming to where the drift cuts across there is a belt of limestone ten feet wide and then it comes into ore again you would call that a vein of limestone outside of your vein?
A. I considered it so—I considered it was back into the limestone further than this——
Q. From 412 to 413 we have the same conditions?
A. We have limestone for some part of the distance; a little distance, 6 or 7 feet is my recollection that you are in ore.
Q. That would be further into the vein than you were?
221 A. Well, I don't know; it might be and might not; it might be but it did not appear to be.
Q. That is about the strike of the bed?
A. Not quite; I presume it is probably not quite that much.
Q. This vein you are referring to in this level we are talking about, is in the bed vein?
A. Yes, sir.
Q. You mean by that it conforms to the bedding?
A. Yes, sir.
Q. That being so if the strike of the beds is approximately as I

hold my ruler, you must be further away from the wall a good deal between station 411 and 413 than you are at 411, and further into your vein?

A. I would not say that was the strike of the bed.

Q. Isn't it approximately?

A. I just simply take the strike of the beds at approximately 20° north of east.

Q. Assume that the strike of the beds is substantially parallel with the side lines of the Jordan as laid down upon this map of yours?

A. Yes.

Q. And that the vein we are talking about now as you have told us is the bed vein?

A. Yes, sir.

Q. Between stations 412 and 413 you ought to be further into your vein and further away from your foot wall than you are at station 411?

A. Yes; that would be true.

Q. Now still at 411 you have ore?

A. Yes, sir.

Q. Between stations 411 and 413 where you are further into your vein you have barren limestone with ore on either side of it as cut by that drift?

A. With ore on neither side?

Q. On either side?

A. There is no ore that I know of on the south side.

Q. At 412 what have you?

A. We have limestone.

Q. You have ore at 411, have you?

A. Yes, sir.

Q. You have on either side ore?

A. Yes; we have.

Q. And then coming from 412 to 413 you are in lime a part of the time and ore part of the time?

A. You are in lime until you get out of the lime between 412 and 413 and then you are in ore again.

Q. Then you are in ore again?

A. Yes, sir.

Q. And the lime you have between those last two stations is intersecting the foot wall country?

A. What I meant by foot wall I meant it was in my opinion in unmineralized limestone, limestone that was not mineralized and that the ore did not extend back that way any further.

Q. From 413 going around to 417 are you in ore?

A. Yes.

Q. All the way?

A. Yes, sir.

Q. From 417 to 420 you were in ore?

A. Yes, sir.

Q. And in the cross cut running south from 418 at its face you are in ore?

A. Yes, sir.

222 Q. All the way?
A. All the way, yes, sir.
Q. What is the distance from station 403 to where you are in the stope at 420?
A. Oh, approximately 400 feet.
Q. And the extreme end of this 400 feet, whatever it may be, you have ore, and the direction of the lime between the two points is approximately the line of strike of the beds of the limestone, is it not?
A. No, sir.
Q. Approximately?
A. Well, the beds of limestone would strike something like that, probably, yes, sir; something like that.
Q. It does not depart from it?
A. It departs some, considerably. In other words it runs south of the west line—north of the west——
Q. Which end of this streten of 400 feet is nearest to the hanging wall of the quartzite?
A. Which is the nearest?
Q. To the hanging wall of the quartzite?
A. If the beds continue true all the way through, this would be.
Q. The western one?
A. Yes, sir.
Q. Would be considerably nearer to the hanging wall of quartzite than that part at the eastern end?
A. Possibly if on the same level; I would not say that they were upon the same level.
Q. This Turnsheet level is practically on the same level is it not?
A. Yes; it is practically on the same level; but then this raises considerably.
Q. Just the natural grade?
A. No; there is more than the natural grade.
Q. The elevation at the eastern end is?
A. I don't think the changes out there——
Q. At the west end it is 1240; nine feet difference in a stretch of 400 feet?
A. In 400 feet, yes, sir.
Q. Is that Turnsheet level above or below the Ashland upper tunnel?
A. It is below all of the Ashland tunnels.
Q. How far below the lower Ashland is it?
A. It is about 25 or 30 feet; 27 or 28 feet probably.
Q. How much can you tell us of that Turnsheet level here is in the bed vein and how much of it is Sampson vein and how much in the Ashland vein, or are you able to tell it?
A. I could tell pretty near what my conclusions are.
Q. Now starting from the east end of it tell us when you get out of the bed vein?
A. Well this shows where there is ore in this drift which conforms to the dip of the bed.
Q. It is when you get it in your opinion in the same ore body

when the pass from the bed vein into the fissure vein on that level?

223 A. You encounter ore that is in the fissure near station 407, beyond station 407.

Q. At station 407, near that, in this ore body that you followed?

A. Beyond 407.

Q. Do you mean west of 407?

A. West of 407.

Q. That ore you think is not in the bed vein?

A. No, sir.

Q. But in the Sampson fissure?

A. In the Sampson fissure.

Q. And when did you pass out of the Sampson fissure into, the bed vein again, going west in your judgment?

A. It is pretty hard to determine that; in the drift going west, 409 to 407 the ore has a fissure structure for ten or twelve feet westerly from station 408.

Q. And then do you think you come into the bed vein again?

A. I think there is so little ore there it is pretty hard to determine. You have the bed vein in this drift.

Q. Here is the Finn stope; that is a stope on the same level.

A. That Finn stope is on the same level.

Q. Is that in the bed vein?

A. That is partly in the bed and fissure; it appears to be in the edge of the fissure.

Q. After leaving station 408 following this ore body, when do you unmistakably pass out of the bed vein and come into what you call the fissure on this Turn sheet level?

A. You pass out as I fix it at 18 feet. Southwesterly or southeasterly and easterly from 416 on that level.

Q. That would be where I hold my pointer?

A. Yes; something like that.

Q. And then on the west you are in the fissure vein?

A. I call it fissure just according to the structure.

Q. Is not the vein lying flat from 160 to 120?

A. No, sir.

Q. Lying as flat as the beds?

A. The ore here is bounded along here by the limestone overhanging wall it pitches with the beds.

Q. Is not the ore that you have from 416 to 420 lying as flat as the beds lie?

A. I do not understand your question, if you mean how the ore is bounded, I say here there is over the roof apparently limestone over them, going out there with the ore structure straight up and down.

Q. Is the ore that you have there—I think you misunderstood my question. You know what I mean when I say the ore is as flat as the beds?

A. Well, now you mean—you understand me.

Q. You understand that the ore is as flat as the dip of the beds? don't you?

A. Yes sir.

Q. Isn't the ore that you have from station 416 to 420 lying as flat as the dip of the beds?

224 A. Not all the time, no, sir.

Q. Part of the time?

A. Part of the time.

Q. And the fissure there is very much steeper than the dip of the beds?

A. It is entirely in the other direction. That is to say west and the ore has a fissure structure, and the ore structure dips the way the fissure dips.

Q. The beds dip there at about 30 degrees from a horizontal?

A. 30 or 35.

Q. And your fissure dips there about at 70?

A. 60 or 70.

Q. And the dip of the ore conforms to the dip of the beds and not the dip of the fissure?

A. The dip does not conform to one, it conforms to both. I can explain that.

Q. No; I don't want any explanation?

A. Yes, sir.

Q. I think I understand you?

A. Yes.

Q. A part of it is conformable to the dip of the beds and a part of it conformable to the dip of the fissure; is that it?

A. No, sir.

Q. Explain?

A. The structure of the ore, the fractures, the splitting the laminations of the ore bear the dip of the fissure. It is bounded there by a limestone wall and that makes the dip of the beds in places only.

Q. As you follow down on the hanging, top side of the ore, you are going down on an angle of dip corresponding to the dip of the limestone beds?

A. I have not gone down on that limestone at all; we have not driven down in it.

Q. You spoke of a roof of limestone going down?

A. Overhead over the top of the ore.

Q. Over the top of the ore?

A. On the drift.

Q. Where you do see it isn't the top of the ore up there conformable in its dip with the dip of the limestone roof that you have?

A. A part of it. I will explain, the limestone roof pitching down from the north at an angle of about 35 degrees in places, bounding apparently the ore, but in places there have been some drifts driven in and the ore goes right up through a fissure crack, goes right up through that bed of limestone.

Q. Now coming down to the west drift, here is where you have your fissure 180 feet wide?

A. That has the fissure structure out that far.

Q. Is that 180 feet all referable to the Ashland vein, to what you call the Ashland vein in your judgment?

A. In my judgment yes, sir.

Q. No part of it belongs to the bed vein?

A. Well, no, not up to 512.

225 Q. Now crossing to the work running along what is marked "Neptune tunnel" southerly from station 507, back to 504, have you ore in there?

A. I did not go back that far.

Q. How far back did you go?

A. I went back to about there.

Q. Didn't you speak about 504 repeatedly?

A. Probably I did, if I did I was mistaken.

Q. You know that you did?

A. Yes; I think so.

Q. And weren't you back there?

A. I think I was; I could not say.

Q. Now from 507 to 504 on this same level, West drift, have you ore?

A. We have; there is some ore along the side of the tunnel in places. Now I will describe it. In places some ore along that side of the tunnel, and the tunnel seems to be, the ore seems to be standing there in the fissure form on the side of the tunnel. A little cut driven back into it, show little lines of ore running down into the bed and finishing. You cannot determine on that side of the tunnel of its being connected with the ore; I cannot determine what there is in beyond it, but it looks to be a slab of ore, a streak of ore laying along with the tunnel.

Q. What I want is whether the ore you have there is in your judgment in the bedded vein or fissure vein?

A. I think all the ore there is there belongs to the fissure.

Q. Sampson fissure?

A. To the Sampson fissure.

Q. Have you in that line of work anywhere, any of your bed vein exposed?

A. In this part here.

Q. From station 517 along the West drift out to this cross cut, about 510, and back through there to Station 507 and this station 504 have you your bed vein anywhere exposed?

A. Yes.

Q. Where?

A. 512 out in that cross cut.

Q. In 512?

A. South from 512 to the mouth of that cross cut; that face is in ore.

Q. In the bed vein?

A. Apparently it is on the line of this fissure.

Q. Where do you fix the easterly limit of that fissure?

A. At 512.

Q. Now put your ruler on what you claim to be the course or strike of the fissure at that point?

A. What I claim to be the course or strike?

Q. Of the Ashland fissure?

A. Yes.

Q. Now point out where you say you found ore in that vicinity in the bed vein?

226 A. Upon that side of this rule, in that drift and out here the face of all that work is in ore both that and this extending back under the ruler.

Q. And that ore that you pointed to is in the bed vein?

A. I say that it is beyond the fissure structure which shows up to that point. Yes; in the bed vein.

Q. And when you get westerly of station 516 and 517 in the face you are in the bed vein again?

A. In the fissure all the way there.

Q. Didn't you say on direct examination that in the westerly part of the West drift you were in the bed vein?

A. No, sir.

Q. You say that you did not; if you did make such a statement you were mistaken were you?

A. I did not make it, at least if I did, I was mistaken to a certainty. I said the face of that was in limestone but that some of the ore in it bore the fissure structure at the face.

Q. Now was it not clear out to this face?

A. Yes, sir.

Q. Back to station 512. Give the distance back to station 512?

A. About 185—180 feet.

Q. Is it not more than that?

A. No—about 180 feet.

Q. I invite your attention to the place marked "Raise" on this map and this which apparently goes up from the West drift on the blue level?

A. Yes, sir.

Q. Does that go up from that West drift?

A. Yes; goes up from that West drift.

Q. Do you know how near to the surface it gets?

A. I do not.

Q. It is about midway between the upper Ashland tunnel and the Lower Ashland where it starts, is it not?

A. No, sir; it starts on the level of the Ashland tunnel.

Q. The upper Ashland?

A. Yes; and goes up; it goes upwards. The fissures there in the Ashland tunnel are standing pretty steep.

Q. Aren't they about 70°?

A. Yes, sir.

Q. And you followed up on that raise on ore, did you?

A. Yes.

Q. And going up as flat as 30 degrees, is it not?

A. Yes.

Q. Is it in your fissure vein?

A. No, sir.

Q. So here you have ore in the upper tunnel that is in the fissure vein and in the lower tunnel in the fissure vein and right between the two, you have ore in that raise which is in the bed vein?

A. The dip of the fissure is that way, and at the lower level——

Q. Is that the bed vein?
A. Yes; part of it is in the bed.
Q. The top of that raise is only about 6 feet wide?
A. Yes.
227 Q. The top of that raise is in the bed vein, and the ore heads against the lime at the top?
A. The ore is still going up.
Q. Isn't the ore entirely going out?
A. No, sir; there is a drift from the top of that raise, and there is a sheet of ore in the raise still going on up.
Q. Wherever it goes, no matter what the fact may be about that, it is in the bed vein?
A. Yes, sir.
Q. Do you know where the Grizzly discovery is?
A. I do not.
Q. Do you know whether the Grizzly discovery is on the line of the Ashland fissure?
A. I do not.
Q. The Ashland fissure crosses both lines, side lines of the Grizzly fissure does it not?
A. It would as laid down there—is this the Grizzly?
Q. Yes.
A. Yes; it would cross both side lines.
Q. You were out in this tracing?
A. Yes, sir.
Q. And you were in the place marked "Old Cut and Cave?"
A. I walked along it. Yes, sir.
Q. You were in the fissure, as you were walking along the tracing marked "Stripping on Apex of fissure."?
A. Yes.
Q. And you go out from that fissure into this Old Cut and Cave and found ore all the way as far as the cut goes?
A. Evidences of ore, but it is caved down and I would not say there was ore all the way.
Q. Looks like it?
A. It looks as if there had been ore along there all the way, yes.
Q. And do you think that is a part of the fissure vein?
A. I would not say, I would not attempt to say whether there was or was not, because there was not enough of an exposure; The cut had caved down, and I doubt if the fissure extended out that far; some of it might be in the fissure and some of it might be—I would not say, I could not say because the ore was so oxidized that the fissure structure would be largely lost.
Q. What is there to terminate the outcrop of what you call the Kempton vein at its westerly end?
A. What is there to what?
Q. To terminate it in its westerly end; what is there that enables you to say that it stops there?
A. Because there is no more ore beyond there.
Q. Is there any ore at station 904?
A. Yes, sir.

Q. And do you stop always when the ore stops in tracing the vein?

A. No, sir; I say there is ore as far as I can see here and if the stripping was continued on through and if there was any ore I would say so.

228 Q. You cannot say that the vein stops there; there is nothing to indicate that it does?

A. I do not say that it does; I do not know that it does.

Q. Nothing to indicate it?

A. No, sir.

Q. The indication, on the contrary, would be that it would continue some further any way?

A. If possibly it goes out that far possibly it would.

Q. For instance between the Air shaft at station 100 back to this opening here marked top of McCarthy incline you have barren rock there?

A. The rocks are not exposed there; I do not say that they are; the dumps extend down over here and there is a dump right here on this side of the air shaft and the vein going under the dump apparently.

Q. Isn't there between that point and the point marked top of McIntyre incline and where we take up the tracing, marked Old Excavation on apex of Kempton vein" there at that point, or at this point near to the Air shaft, isn't there a belt of barren lime across there?

A. There is limestone exposed from the caving down or excavation there out to these openings, limestone beds.

Q. Crossing the line of your apex, isn't there barren limestone there at the point where I now hold my ruler or at this point near the Air shaft?

A. I did not see it; I don't know if there is; I did not see it.

Q. Don't you know that some weeks or some months ago, about that, that this tracing made by the Kempton people stopped in the vicinity of the Air shaft and that they claimed then that that was the end of their vein?

A. I do not.

Q. And afterwards they went over the bed of limestone and took up this tracing again and carried it over there further?

A. I do not.

Q. You don't know that?

A. No, sir.

Q. You have ore as far as this tracing goes west of it?

A. Yes, sir.

Redirect examination.

By Mr. HILES:

Q. Mr. Morehouse, you stated in your cross examination that there were some points where the fissure extended to the quartzite, and that in places it was as much as two feet wide.

A. Yes, sir.

Q. And in other places it would appear to be only a few inches in width?

A. Yes, sir.

Q. Were there ore deposits in the quartzite along these small fissures?

A. Yes, sir.

Q. These small parts of the fissure?

A. Yes, sir.

229 Q. Which is the harder rock; the lime or the quartzite?

A. The Quartzite.

Recess until 2 P. M.

(Next witness James E. Beveridge).

JAMES E. BEVERIDGE, a witness produced by defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Your name is James E. Beveridge?

A. Yes, sir.

Q. Where do you live?

A. Salt Lake City.

Q. How old are you?

A. I am in my 52d year.

Q. What is your business?

A. Mining.

Q. How long have you been engaged in mining?

A. About 35 years.

Q. Whereabouts, what part of the country?

A. In Wyoming, Utah, Mexico, South America, Scotland, in Montana and several other places.

Q. What has been the nature of your occupation?

A. Quartz mining usually.

Q. In what capacities have you carried on business?

A. In every capacity connected with a mine, from car running to mining superintendent and manager.

Q. You have been a manager and superintendent of mines?

A. Yes, sir.

Q. Have you in your business examined and reported on mines for people who intended to purchase?

A. A great many, yes.

Q. A great many?

A. Yes.

Q. In various parts of the country?

A. Yes, sir.

Q. Are you acquainted with the district known as the West Mountain Mining District in this county?

A. Yes, sir.

Q. How long have you been acquainted with that district?

A. About 25 years.
Q. You have mined there?
A. Yes, sir.
Q. You know the difference, of course, between limestone and quartzite and porphyry and so on?
A. Yes, sir.
Q. You have a general knowledge of the rocks which constitute the crust of the earth in that part of the country?
A. Yes.
Q. Do you know the part of the district in which is situated the Kempton mine; do you know the Kempton mines?
A. Yes.
Q. Do you know where the Ashland mine is?
A. Yes, sir.
Q. Have you had occasion to examine the Ashland and Kempton ground?
A. Yes; I have spent a few days there.
230 Q. You have spent a few days there?
A. Yes, sir.
Q. Have you made an examination upon the surface and underground for the purpose of determining the locus of a supposed lode or ore vein there?
A. Yes; on the Ashland and Kempton.
Q. You have made examinations both underground and on the surface?
A. Yes, sir.
Q. Now I will ask you to look at this plat and see if you can recognize that as being a delineation of the Kempton and the Ashland claims?
A. Yes, sir; I do. I have examined the surface of those claims.
Q. You have seen the plat before?
A. Yes, sir.
Q. Now I will ask you Mr. Beveridge if you will look at the map marked Exhibit 21 and see if you recognize that as a representation of the underground workings?
A. I do.
Q. Calling your attention first to what appears to be tracings upon the surface of the Kempton ground, did you ever make an examination of the Kempton surface for the purpose of determining whether the ore vein outcropped there?
A. Yes; I have examined this outcrop here and these excavations (indicates)
Q. Now commencing at the west end state what you saw and follow along towards the east?
A. Commencing at this point?
Q. Yes.
A. 904 here, are excavations there on the vein. At the point of entrance of Cut, 903 I presume is intended for that and to this point right up through there, I saw this on the surface at point 904; I found a vein that is running up through there. At point 100 Air shaft, I think it is, passing along from here to this large excavation

there on the apex of the Kempton vein, and passed on through here and on up through here to this point to here.

Q. What did you discover at this point here in the way of ore?

A. I discovered ore there and there is ore here.

Q. Did you discover ore all along?

A. Well, to the point where it goes underground.

Q. Called Air shaft?

A. Called shaft, it shows a stripping to this point shown here and at this point I do not remember of seeing ore exposed there.

Q. Where next did you see the ore exposed?

A. It was next exposed where the vein matter appeared in the excavation here at several points passing right on through to here up in this vein to this shaft, I suppose it is there.

Q. Can you say where it ends?

A. It ends about this point here within a few feet of this shaft; I do not see any mark.

231 Q. At the point marked shaft?

A. Shaft, Small shaft, and a little tunnel running from the bottom of the shaft out through the Kempton side lines. I presume that is correct.

Q. Is there any ore in that tunnel running out?

A. I did not see any ore with the exception of a few stringers running through there.

Q. I will ask you if that is alongside of the surface lines as delineated upon that map?

A. I believe it is as I was shown the ground.

Q. The point you mark is inside of the lines delineated upon the map.

A. Yes, sir; inside of the side lines of the Kempton claim.

Q. Now turn to the Ashland fissure; what do you see there in the way of an outcrop on the surface?

A. At a point here——

Q. Do you know where the end line of the Ashland is?

A. I am not certain about that.

Q. The southwesterly end line?

A. I am not certain about it.

Q. Well, where did you commence to observe, if at all, the outcrop of the Ashland vein upon the surface?

A. At the point 910 is the first observation I had of the Ashland fissure, at this point.

Q. I will ask you where that is with reference to the top of Jordan Hill?

A. It is beyond the top of Jordan hill.

Q. On the north side?

A. On the north side of Jordan Hill.

Q. Where did you go from thence?

A. We passed on south to point 909 right over here, and here is the last outcrop on the hill of quartzite, through which we followed the fissure right down through there, past 908, right on to here past 907 and right on down to the shaft.

Q. A place called caved shaft?

A. Caved shaft.

Q. Now I will ask you if you found ore in that excavation all the way?

A. Yes, sir; I did.

Q. It was on top of the ground?

A. Yes, sir.

Q. And plainly visible?

A. Plainly visible.

Q. From the point where you started?

A. Yes, sir; 910.

Q. On to the caved shaft?

A. Yes, sir.

Q. Ore all the way?

A. Yes, sir.

Q. Now proceed?

A. From that point at the caved shaft we went on down to an excavation down there, which if my recollection serves me correctly, is a short tunnel in there. Passing from there on then a distance of about 8 feet, at the end of drift, seems to be stoped out; there
232 is some ore in there. The connection of the stope going on up there connects at this point here. At this point it had been caved at one time, and I found that they had been trying to open it up just previous to my going there; it was all caved in. It was stoped ground. From that point I went down to a point 903 where there is a large open cut and went into a tunnel; old stope it is marked here, I think about 150 feet. I am not certain of a few feet, but somewheres in that distance. This was also stoped over there, up in through there.

Q. And did you find the fissure in there?

A. I found the fissure right in the tunnel. From that point I believe I went down to a raise from this tunnel, the lower tunnel.

Q. The point marked on the map trench, what is that?

A. That is a trench that comes alongside the road; I don't know for what purpose it was done. There was a wagon road passing up there if I remember right and the trench alongside of it.

Q. Did you proceed any further to the southwest in tracing the vein upon the top of the ground than—?

A. This point here?

Q. A point marked trench?

A. No; I did not.

Q. I will ask you Mr. Beveridge what kind of rock it was from the top of the hill down to the point marked trench?

A. I made a measurement from the north edge of the quartzite as nearly horizontal as I could, and my recollection is that I measured down about 150 feet, more or less a few feet across the quartzite, and from there I went right on down——

Q. That is you measured from over on the north side of the hill where the quartzite commences?

A. Yes, sir.

Q. Over the summit to the south side?

A. Yes, sir.

Q. 150 feet?
A. Yes, sir.
Q. In quartzite?
A. Yes, sir. And the tracing after that showed lime continuously, lime as far down as I went to a point down here; that would be point 903, or perhaps 902; I am not clear about that.
Q. I will ask you if after that you went into what is called the Ashland tunnel No. 2?
A. I did, yes, sir.
Q. That has its portal outside of Ashland ground?
A. Yes, sir.
Q. In what does that commence?
A. That runs in quartzite until it reaches a point—there is no point marked on the map there.
Q. Well, turn to the other map (21). This is the mouth of the tunnel here?
A. Yes, sir.
233 Q. Which you say commences in quartzite?
A. Yes; and it continues in quartzite to a point 702, at which the contact appears between the quartzite and the lime.
Q. The contact appears there in the tunnel?
A. Somewhere near that point there.
Q. From that point did you proceed underground on the Ashland vein?
A. Yes, sir.
Q. State how you proceeded and what you saw from point to point.
A. From point 702, I passed on through into the fissure right on through to point 709.
Q. From that point of the intersection state what you saw in the way of an ore vein?
A. Well, point 702 is a drift or level running off to the southwest, I believe it is, and intercepts an ore body in the quartzite; this is supposed to be the ore body there going further on——
Q. I do not care for that. I want you to go north of that. What did you see between the point here and a point there?
A. There is ore all the way through in that fissure there.
Q. How is the fissure exposed?
A. Simply by having levels run along on it. There were places between the timbers where I could see—they were not so closely timbered but what I could see through in places but I could not observe it in all places; but it had been taken down there and had been stoped out very largely.
Q. Proceed along that working?
A. At point 709, there was a fault apparently in the fissure, or sheer plane, which throws it several feet further east.
Q. Moves the fissure?
A. The fissure, but on the south wall of the sheer plane there is ore along the wall, not a very large quantity but still evidences of ore there which any miner with any knowledge as a miner at all

would follow this vein. At this point we come around the corner there and connect with point 711.

Objected to as incompetent unless the same latitude is given to plaintiff.

Q. Proceed.

A. From point 711 we pass through ore in the fissure. Shall I go on through that tunnel, or stop at these raises?

Q. Oh go on through the tunnel?

A. Passing on through all the way to the end; there is one point there, it is beyond 714, it is perhaps 40 feet beyond that and then we come to this drift in the tunnel which runs west across the fissure where you come to the lime wall.

Q. There is a lime wall?

234 A. A lime wall on the west side of the fissure.

Q. Now from point 714 is there any excavation east?

A. A drift from near point 17 runs east across the fissure down into what is known as the Lead stope at this point 210. It runs down this way. It is more of a winze than anything else. There is a slight depression.

Q. Well, how do you get from the lower Ashland tunnel into what is called the Turn sheet level?

A. From the lower Ashland tunnel we pass over to the Lead stope and a small drift there what is known as the Copper drift and over to here on this Copper drift Beginning at 210 on the map, pass at 209 and on to 207, 206/205, 204 to 200, and then from there we pass down through the winze to the Turnsheet level.

Q. I will ask you if that is all in ore?

A. All in ore; yes sir; it is all ore from this point to where we pass down into the Turnsheet level.

Q. From the Copper drift down the winze into the Turnsheet level how is it?

A. It is ore.

Q. All ore?

A. Yes.

Q. Now when you get to the Turn sheet level at that point which you designate through the winze, after you go to the west on the Turn sheet level, what do you find?

A. In passing from point 207, from point 200 down into the Turnsheet level to the lower level, then we pass out, well a distance of perhaps 15 or 20 feet, we encounter a bunch of lime there in the tunnel and passing on——

Q. On the Turn sheet level?

A. On the Turnsheet level.

Q. The Turnsheet level on this map is marked how?

A. Yellow. There is a space between, somewheres near the center between 412 and 411 we encounter lime and somewhere between 412 and 413 where it disappears and we pass out into the ore on the Turnsheet level; 415 there is ore; 416 there is ore; 417 there is ore; 418, 420 there is ore.

Q. Suppose you wanted to get from the Turnsheet level down below to the drift called West drift; how would you go?

A. It is down a raise from the Turnsheet level from point 419; and another way it would be—it would be called a winze going down, of course—at 419 you go down that raise to near the point 515 on the West drift.

Q. I will ask you whether that winze from the Turnsheet level down is in ore?

A. There is ore all the way.

Q. Solid ore?

A. Yes, sir.

Q. Now did you observe any difference between the ore in the Ashland vein as respects its stratification, the manner in which it lays, and any ore which you may have seen to the east in what is called the bedded vein?

235 A. All the difference I discovered was the structure of the ore in the immediate vicinity of the Ashland fissure was more of a vertical plane that it would be through the ore of the bedded vein. Apparently it so appears there and no doubt would appear wherever the ore is hard enough, the structure of the vein is hard enough to maintain the structure.

Q. Now returning back from the point here what is that point in West drift?

A. 515.

Q. Returning back into the lower Ashland tunnel I will ask you if you made any explorations of examination for the purpose of seeing whether the vein in the lower tunnel was connected with the workings above it in the Ashland fissure?

A. Yes, sir; I did.

Q. How did you pursue the investigation and what did you find?

A. We passed up through, or rather we passed down through this raise. There is no point named at that. However I can give it to you. It is a point between, I should judge about 30 feet north of point 711.

Q. There is a raise which leads from the lower Ashland tunnel to Ashland No. 1?

A. Yes; Ashland No. 1 tunnel.

Q. Did you go through that?

A. Yes.

Q. What was that in?

A. Ore.

Q. After you got up into the tunnel what did you find?

A. In the upper tunnel I passed on through to the drift; it is 605 and near there, there seems to be a little inside of that, a little north of that and east of that, there is a drift running across there a few feet on the bedded planes—there is a short drift running from this upper Ashland tunnel it is called here, I think perhaps ten or 12 feet, and it crossed in a westerly direction in ore. When I was there they still had ore in the face and were in about that distance and pass on to the point 606 at which point a drift is run in there nearly 90 feet in ore nearly all the way; there is virtually ore all the way.

At this point there is a raise goes up perhaps 20 feet or 25 feet in the ore. At the top of the raise there is a little level which goes back south; that goes through several fissures of ore in the bedded planes. From this point 606 I passed on to 607 and then went down an incline—it is called a raise I believe—I do not see any point here—from 607 to the Copper drift and passed on down through their Copper drift again and went in the drift over the Copper drift; and passed finally into the Lead stope which is the drift over the Copper drift a few feet.

Q. So that this upper Ashland tunnel is connected in that way with the Lead stope and workings below that?

A. Yes, sir.

Q. That you have before described?

236 A. Yes; all through ore.

Q. Now I will ask you whether you made any examination for the purpose of determining whether the vein went towards the surface from this Ashland tunnel, upper tunnel?

A. Yes; we passed through a winze from this short tunnel; also passed through a winze from that Ashland tunnel to the north. It is all stoped out, however, but evidences of ore there; and down through there at a point—I do not see any point.

Q. Do you know whether this tunnel is called the Wheelbarrow tunnel?

A. Yes, sir; called the Wheelbarrow tunnel.

Q. Marked in yellow shading?

A. Yes, sir.

Q. You went through the Wheelbarrow tunnel?

A. Yes; I passed down through the Wheelbarrow tunnel to the Ashland tunnel.

Q. Now how near—I will ask you if there is any excavation over the Wheelbarrow tunnel to the surface?

A. There is an excavation apparently where the ore has been stoped out; there is some ore here of a sulphide nature right there, left in there.

Q. Clear up to the surface?

A. As far as I was and I looked up towards the surface; it was caved down and they were trying to make an opening through when I was there.

Q. It was all caved down as if it had been mined and worked out?

A. Yes, sir.

Q. Now are you able to say what the width of the Ashland fissure is, the ore vein, at the Turnsheet level?

A. At the Turnsheet level?

Q. From your examination?

A. I think about 180, 175 or 80 feet but I will not say exactly the distance, but that is my recollection.

Q. By what means do you distinguish between the Ashland fissure and the bedded vein or bedded fissure, if there is one, distinguishing marks?

A. The structure of the fissure is so plainly marked that one cannot very well fail to mark the difference between that fissure and the

bedded vein for the reason that the bed planes, as a rule, are found in horizontal planes while those of the fissure are vertical, and this is the condition I found here.

Q. I will ask you if you know what is the direction of the dip of the bedding planes in the hill there at this point?

A. In a northwesterly direction usually.

Q. How does the Ashland fissure dip with respect to the dip of the bed planes?

A. That runs in a northerly direction, northerly and southerly.

Q. And they would practically cross the bedding planes?

A. They do cross each other.

237 Q. And you say that the structure of the ore in the fissure vein is lengthwise or parallel to the strike of the—?

A. Of the bed? What is the question?

Q. I ask you whether the ore in the fissure, Ashland fissure, is parallel with the strike of the fissure?

A. Yes, sir; it is.

Q. How is the ore structure in the bedding planes?

A. The ore structure in the bedding planes is just at right angles to the fissure, or nearly so.

Q. Now I will ask you if you made any examination from the surface in Kempton ground through the lower workings for the purpose of determining the continuity of any ore vein which might exist in the bedding planes?

A. In the Kempton ground?

Q. Yes, sir. This is the Kempton; the Kempton incline is on the Kempton ground?

A. I pass down through that.

Q. Commencing where?

A. This is at point 400; to point 401 in the Kempton incline at which point it starts on the fissure, beginning at point 400 I went down to 401, 402 and I found a place where the ore was apparently stoped out, a drift coming back under the incline.

Q. Do you know what that fissure is called that that Kempton incline goes down?

A. The Kempton fissure, I believe; I was told it was. I passed on down through to the stope. Somewhere here there is a stope which was somewhat caved. This stope was located at 403. From point 403 and extending to 404 and from that I passed out to 405 and to a point near 406.

Q. These points are on what is called the Turnsheet level?

A. Turn sheet level.

Q. What is the direction of the drift there on the Turn sheet level?

A. That would be easterly. I was passing westerly of that.

Q. Passing westerly in the bedding planes?

A. In the bedding planes.

Q. What did you find in the way of ore?

A. I found ore through there in various places. At point 406 near that, I found a drift running back in ore, which would be in the foot wall and at that wall it would be taking the course of the foot wall drift. I found some ore there at a point about a few feet fur-

ther, say perhaps eight feet—somewhere in there, I found ore 15 feet along the north side of the level, Turn sheet level lying in the shape of bedding planes. It did not extend quite to the roof of the level. It laid all around the bottom of it 15 feet in length. From point 406 passing this ore I come to point 407 which is immediately or near the center of the stope called Cave here, in which ore has been mined there—had every appearance of that and some
238 ore out around on the walls at this point 407. That was from my observation near the center of that cave. From that point I passed on out to a chute, the chute which goes down to the lower level of the Neptune tunnel, I believe it is, to point 406.

Q. What did you find in there in the way of ore?

A. I found ore there. At the point 408 I passed on further through ore part of the way. There is a point in there where there is one piece of lime perhaps about ten feet beyond—between 408 and 409.

Q. Where is 409?

A. On the Turnsheet, to 409 on the Turnsheet.

Q. When you passed that line what did you find beyond?

A. I found ore here. I passed from 409 to 308 and looked in there where there were evidences of ore. And then from 409 to 410 I found ore on to the point between 412 and 410 and 411, where I encountered this lime in here, a bunch of lime in there. At this point the drift has apparently run back into what I would assume to be the foot wall under the drift.

Q. Well, proceed?

A. Proceeding on to 406, it is in ore. 414 is in ore; that is this drift running to the north is in ore. From this point 415 is in ore.

Q. Let me ask you whereabouts along at these points, if at all, do you encounter—leave the bedded vein and get into the fissure on the Turnsheet level?

A. On the Turnsheet level—I will have to refer to my notes here.

Q. If you have a memorandum you may refer to it?

A. At a point 24 and 1/2 feet westerly, I think, of 414 from the station I located the east boundary.

Q. Of the Ashland fissure?

A. Of the Ashland fissure. And then I passed 417, 418, 419, 420 where I located the west boundary of the Ashland fissure.

Q. So that upon that level in the way that you have described, the bedded ore vein connected with the fissure vein?

A. Yes, sir.

Q. Do you say that commencing here at the portal of the Kempton incline that you are in ore all the way down?

A. Yes, sir; in ore all the way down.

Q. Now I will ask you if you started from any other point in the Ashland ground and followed beneath the surface to ascertain the continuity of the bedded vein and its connection with the fissure vein?

A. Yes, sir; I did. I passed on through what is called the Air shaft down through here at the point 100 passed on to a point 101, which

seems to be located just where I found—oh, this is all right—
239 at a distance of 20 feet down the ladder; that is my recollection, 20 feet down there I encountered the drifts running across on the ore at the beginning of the stope.

Q. About 20 feet below the surface?

A. I saw the ore; I went down on ore on this ladder, and I passed on down to a point, 102 into the Dustan stope, what was then the junction stope to me. I passed on down this raise, past 103, 104, 106, 105 and to point 107, which point was a drift running back on the strike of the bed or nearly so. It shows ore through there all the way. I passed on down to point 108 and then passed from 108 to point 108-*a*—I do not see it marked here. My recollection is that is the point that was there. 108-*a* to the Sampson fissure at which point I found ore had been stoped out in considerable quantities and there was some ore there. Then I went back to 108 and passed down the raise to a drift in the Kempton tunnel I believe it is.

Q. The Kempton tunnel marked in green?

A. Yes; I passed out through there to a point 12, is that—I believe that is 12. From point 12 I passed on down into the Copper stope again which I found all in ore making this connection from the Air shaft clear down through there to the Copper stope.

Q. All in ore?

A. All in ore.

Q. Did you enter the portal of the Kempton tunnel and follow it in?

A. Yes, sir; I believe I did, I passed in, beginning at a point 10, is that—I believe it is point 0.

Q. Point zero?

A. To point 1 and on to points 2, 3, 4, at which point was a raise which went to the surface.

Q. Where did you first encounter going into that tunnel the bedded vein?

A. That is the point, my recollection is, the nearest point; that is the first point where I encountered it.

Q. At point 4 from the portal of the Kempton tunnel?

A. I believe, if my memory serves me correctly. I went back from point 4 about 12 feet to the point where I first saw the bedded vein. I may be wrong—the bedded vein appeared and come down on the northerly dip from point 4. At point 4 I passed in through this drift at the top of what is called the Rope incline to me. There is ore through here to point 301 from which point I went on down the incline, or 301 I should say.

Q. What did you see in the way of ore?

A. Ore; there is ore all the way down, to 303 to 302 passed through ore. From 302 to 301 there is ore. Then I passed into the stope that had been mined out, on down through the ore connected
240 with the Sampson fissure, down at this point there was ore all the way. That again takes us down to the Turn sheet level.

Q. Now going back to point 515 on the West drift at the bottom of the Neptune tunnel, did you make explorations to the east in that

along these workings under that drift; did you examine this over here to the east?

A. Yes; I believe I did on the West drift; this is ore here.

Q. You went west from 515 did you?

A. From 515 I went in there.

Q. To examine it?

A. Yes, sir.

Q. What did you find?

A. I found ore in there and here, along here. I passed by 15 back to 514, 513, 512.

Q. In ore?

A. Yes.

Q. Here is a cross cut from here?

A. Yes; there was ore all through there. There is ore all the way through there to 511 in ore. There was a raise at that point 510.

Q. Now do you find ore along there?

A. I am not certain about that. I will have to consult my notes about that.

Q. You may refer to your notes to see what you found along this West drift, if you have any notes upon the point?

A. My recollection is there was ore all the way through there.

Q. Well, did you go from this point 510 east?

A. Yes; from 510 east.

Q. What did you find? Can you remember that you went through that drift?

A. I cannot remember; I cannot recollect the drift at all.

Q. And then you probably did not go through there, that is to the east of 510.

Mr. DICKSON: The witness testified once there was ore all through there and then referred to his notes and found there was ore and it is now improper for counsel to state that he was not in there.

WITNESS (after referring to notes): I have a note here; I presume I am all right; I have been there. My notes state here at station 512, west drift Neptune tunnel, east edge Ashland fissure comes to bedded planes. That must be right; 512 is there.

Q. Now did you go north in that cross cut?

A. Yes; I did.

Q. What did you find?

A. I passed through there; I found ore through there.

Q. In going east from the——

241 A. 511, 510, 509, I found ore through here; 508, 507. My recollection is I found ore all through here.

Q. Do you know where the Neptune tunnel level is?

A. This is the Neptune tunnel here.

Q. Does that connect with the Neptune tunnel?

A. Yes, sir; it passes right out through here.

Q. Did you make any examination of the workings to the east? called the east drift on that map, that is to say, here—you can't say

whether you were to a working marked on this map as east drift or not?

A. No, sir; I do not remember that I was.

Q. And then you know nothing about it. Now I will ask you if you know from your examination where the mass of the ore in the bedded vein is with reference to what is called the Sampson fissure and the Ashland fissure?

A. Right here. This is the Sampson fissure connecting right through here.

Q. Now I did not ask you where the Sampson fissure was—you know where that is?

A. Yes, sir.

Q. I ask you where the mass of the ore vein is in the bedded vein with respect to the Sampson fissure and the Ashland fissure?

A. Between the fissures.

Q. Between the two fissures?

A. Yes, sir; between the two fissures.

Q. Can you say whether any stratification of the ore body in the Sampson fissure as well as the Ashland fissure?

A. Yes; but not so well marked.

Q. What did you answer?

A. There is.

Q. The ore is stratified in that as in the Ashland fissure?

A. Yes, sir.

Q. That is between these two fissures that the mass of the ore in the bedded vein lies?

A. Yes, sir.

Q. Now Mr. Beveridge, if you did go through this West drift at all, I wish you would examine your notes, if you have any notes and see whether the notes show that there was ore through that West drift?

Objected to by counsel for plaintiff.

WITNESS:

A. I am not certain about that.

Mr. HILES: I will not take up any further time on that point.

Cross-examination.

By Mr. DICKSON:

Q. Can you refer readily now to the notes you had and did
242 refer to in your direct examination, not the book you have in your hand but the one you referred to at that time when you were being examined on direct?

A. I cannot do it and be certain. I can refer to the notes.

Q. Well, if you can?

A. I have got a note somewhere, but at this moment I cannot find it may it please the Court. I do not wish to make any statement that I am not certain about.

Q. I am not imputing that to you at all.

Q. Come to map 20. Have you a continuous tracing in ore from

the point marked shaft about 15 inches north of the post No. 1 of Mountain Gem through to station 904, or have you interruptions in that ore tracing through the lime belt?

A. There is a little point there that is not traced through.

Q. About 10 feet from it?

A. Well, it may be more than that.

Q. That is lime?

A. I cannot tell.

Q. At the surface?

A. It is covered up by debris; I cannot tell.

Q. Isn't the lime all exposed at the surface and so plain that nobody could mistake it and then don't you go across bedded lime about 10 or 12 feet wide and take up the tracing here again. Is not that so?

A. I don't think so. I think this tracing is very clearly marked through here; there is a portion here——

Q. Isn't there a portion between that point marked Open cut?

A. I did not see that.

Q. Over just to the west of the discovery of the Kempton west of that open cut and east of the place marked here, shaft. Isn't there a belt of lime cropping to the surface which is not, so far as you can see by the eye, mineralized at all?

A. I don't think there is; my recollection is that there is not.

Q. At station 904 you have ore at the extreme west end of that tracing, have you not?

A. Yes, sir.

Q. There is nothing to indicate that you have reached the westerly extremity of what you call the apex of the bedded vein?

A. No, sir.

Q. Then near station 903 you have a surface opening in ore haven't you?

A. Here, just across here.

Q. Here is station 903?

A. Well, that is in a cave.

Q. You saw this exposed here, marked caved pit?

A. Yes.

Q. You pointed to that in direct did you not?

A. No; I did not.

Q. Did you see that when you were upon the ground?

A. I believe I did. I do not understand this map very well. I have traced it up there.

Q. This is not shown on the other map, these surface workings?

A. There is a caved pit on top.

243 Q. On top?

A. Yes; I remember that.

Q. You examined that?

A. Yes, sir.

Q. See any ore there in that?

A. It is all caved around there.

Q. Were you at the surface?

A. Yes; I was at the surface.

Q. Any evidence of ore there?

A. It is caved so that I do not remember whether there was any ore there or not. That space from here to this point in the tunnel to point 600, I passed in ore and followed ore up inside of that.

Q. You do not know whether there is ore there or not?

A. There is ore.

Q. At the surface I understood you to say that you could not tell?

A. It passed through here; I don't believe I saw it at the surface.

Q. I am confining myself to the surface and not referring to the underground workings at all. Between stations 909 and 908 there is a working leading off to the west and marked on this map old cut and cave, on the north side of the quartzite? Were you in that?

A. On the north side of the quartzite is that? 900 is here and it is just over the ridge.

Q. It is in limestone, is it not?

A. In the limestone laying on the quartzite.

Q. In the limestone just north of the——

A. Laying on the quartzite.

Q. In other words there are two or more belts of limestone which are practically parallel, one being down here by the Old Jordan and another one up here, parallel to it?

A. Yes, sir; and the quartzite belt between.

Q. A quartzite belt between them?

A. Yes, sir.

Q. And this old cut and excavation which puts out to the west between stations 909 and 908 is in the limestone isn't it?

A. Yes, sir.

Q. And it was in ore too, was it not?

A. No; ore; I did not see any ore.

Q. Didn't that indicate to you as a miner that there had been ore in here?

A. No, sir; I did not see any.

Q. Look for it?

A. I did not.

Q. Did it connect with what you call the Ashland fissure?

A. No; I don't think it does.

Q. It makes right out into it and beyond it?

A. I think not.

Q. Does it cross your Ashland fissure?

A. Not to my recollection.

Q. Reach it?

A. It may reach it very closely.

Q. Does it reach it?

A. Perhaps it does.

244 Q. Has it anything to do with your Ashland fissure?

A. Not that I know of.

Q. If there were ore in it did it come from your Ashland fissure in your judgment?

A. It may have done.

Q. Do you know that that was work that was done by the United States Company or its predecessors?

A. No; I don't know.

Q. How about this other work marked large excavation in which we find station 910; you do not know who did that work?

A. I saw some men working out there.

Q. An old excavation there?

A. Yes, sir.

Q. Who did it you don't know?

A. No, sir.

Q. And that is true about the next cut called old cut; know who put that there?

A. No.

Q. Did you trace the fissure as far to the north as that place marked Old cut?

A. Yes; I followed it that far.

Q. You followed it that far?

A. Yes, sir.

Q. Will you be kind enough to hold this ruler on what in your judgment indicates the strike of that fissure at the surface at the apex?

A. No; I could not do that with justice to myself for this reason, this excavation has been done two years ago—the fissure is much lower down as it will show, and I cannot do it from the fact that is caved down.

Q. But you have it here?

A. I had it in the same way, for the simple reason that may be on the west boundary of the fissure and that would make it just according to what you would draw here and it might come over in here so I would not be certain what the strike is.

Q. You cannot tell what the strike is?

A. No; and no one else can tell the strike.

Q. You have an opening at the surface on the fissure?

A. Yes, sir.

Q. Do you know of a cut there that includes the entire fissure?

A. That point evidently does.

Q. And down here near the place marked trench you have the fissure at the surface?

A. Not the trench I have not.

Q. But near it?

A. Near it, yes.

Q. And in the Ashland tunnel?

A. Not the Ashland tunnel; this tunnel, I think it is; the Wheelbarrow tunnel.

Q. Yes; the Wheelbarrow tunnel; I think you are right. But right from the Wheelbarrow tunnel just north of the work marked trench you have the Ashland fissure at the surface?

A. Yes, sir.

245 Q. And taking in the whole width of it in that open working?

A. The fissure, you mean?

Q. Yes, sir.

A. So far as exposed.

Q. Taking in the whole of it?
A. As far as exposed.
Q. And you have it in this stripping?
A. Yes.
Q. Out to the end of the stripping beyond station 909?
A. Yes.
Q. And you have it again in the old cut. Can you not from that indicate about the strike of the fissure at the surface?
A. It may be that the fissure may extend over this way.
Q. It may be very wide in places?
A. May be very wide. It might be right to indicate it on this line here and continuing here but if you put it there, it would take it over this way.
Q. It would be substantially in this direction?
A. Substantially in that direction, yes, sir.
Q. Do you say that the east end of what you call the bedded vein at its apex terminates and stops within the limits of the Kempton claim?
A. At that point? This is the Kempton vein here.
Q. Do you say that it does not extend beyond that side line?
A. No, sir; I do not.
Q. Isn't it your opinion Mr. Beveridge, that it does cross the side line?
A. I have no idea; I could not say, for this reason, where these excavations have been made through here, it is evident to me that they have passed beyond the ore zone as far as it connects on that line. However it may be found further east.
Q. Have you any opinion as to whether it crosses that line or not?
A. No; I have no opinion; the chances are it does cross that line.
Q. If you were to find ore at the surface 20 feet southerly from post No. 1 of the Mountain Gem as indicated by this map, would you not be of the opinion that that vein had crossed the south side line of the Mountain Gem?
A. If I found ore I certainly would, think it would.
Q. Did you look to see whether there was ore at the surface south of that line and within 25 or 30 feet?
A. That is of the Mountain Gem? I don't understand that.
Q. I should say the Kempton side line. If you found ore at the surface south of the side line of the Kempton and within say 30 feet of post No. 1 of the Mountain Gem would you be of the opinion that that vein had crossed the south side line of the Kempton, wouldn't you?
A. I would be certain if I found ore there.
Q. You would be certain; did you look to see?
A. No; I did not.
246 Q. The Kempton incline I believe you were interrogated about?
A. Yes, sir.
Q. That follows ore in the fissure?
A. In the fissure.
Q. From the top to the bottom?

A. Yes, sir.

Q. Is it in the bedded vein?

A. Well, the bedded vein is not very plainly marked until we reach the bottom of it. Right here there are apparently marks of the bedded vein there for the reason that there is a stope I take it that they have mined it out. There was bed planes showing some evidence of a bed vein at that point.

Q. You have told us have you not that the strike of the ore in the bed vein is substantially at right angles to the strike of the fissure?

A. Substantially so.

Q. Now if you go down in the Kempton incline on ore all the way, that instead of being at right angles to the Ashland fissure is parallel to the Ashland fissure, is it not?

A. Which would be parallel.

Q. The Kempton incline?

A. The Kempton incline is on the fissure.

Q. And parallel to the strike of your Ashland vein?

A. Yes; practically.

Q. Therefore if the ore in the bed vein has a strike practically at right angles to that of the fissure it follows that the ore that you follow down the Kempton incline is not in the bed vein, would it not?

A. I do not say that. The fissure is a separate and distinct part from the bed vein any more than this, that the inflow from the fissure has had an influence on the bedding planes.

Q. Are these fissures to be taken as something independent of the bed vein or are they a part of the bed vein?

A. They are not a part of the bed vein according to my idea, further than the influence that they may have had upon the rock surrounding it.

Q. They are independent then?

A. I think so.

Q. I want to understand you. Is the ore in the fissure which you found as you go down the Kempton incline in the bed vein or in a separate independent fissure vein?

A. An independent vein. That is my idea.

Q. That is your idea. Did you follow that fissure to its termination?

A. Well, no, to this point 403.

Q. That is as far as you could follow it?

A. That is as far as I could follow it.

Q. And there this independent fissure vein united with the bedded vein?

A. It shows at this point.

Q. What point, 403?

A. That is where the bedded planes ran into the fissure and has an influence on the ores surrounding it.

Q. But between 403 and 404 that is in the bedded vein?

A. No; I did not say so.

247 Q. What do you say now?

A. I say from this point I could not examine this because

it was not opened; from this point there was evidence of it through here from the fissure.

Q. From the incline?

A. From 403 to 404 and on from there there is evidence of a bedded vein.

Q. That is in your judgment—of course only a matter of opinion,—in the bed vein or in the fissure vein?

A. That is this point 404, point 404 I claim is if anything in the bed vein.

Q. And it is in the bed vein thence on westerly to station 407?

A. Yes, sir.

Q. And then you are in the fissure vein again?

A. Fissure.

Q. In the Sampson fissure; that is another independent vein in your opinion?

A. Yes, sir.

Q. And that Sampson fissure comes to the surface at the point marked Air shaft, does it not?

A. Nearly there.

Q. You have ore in that fissure near station 507 right on a level with that West drift, haven't you?

A. I think there is although I am not sure. This is the point where I tried to refresh my memory on.

Q. Right at the level of the West drift near station 507 between that and point marked Winze, the ore in the Sampson fissure comes up to the level—that red level? Don't you remember that?

A. My recollection is that there is ore there.

Q. At that level?

A. Yes, sir.

Q. Now that Sampson fissure, or series of fissures are standing perpendicular, are they not, or near it?

A. Nearly so.

Q. They have no dip at all?

A. A slight dip to the west standing about 70 I guess near the point where I think they have found the wall; this point here.

Q. That is the Ashland?

A. I know that is; that is what you had reference to.

Q. I am speaking of the Sampson fissure, it extends vertically, does it not?

A. About vertical, yes.

Q. So that having the ore in the Sampson fissure at this point between 507 and the point marked Winze at the red level and having the Sampson fissure here at the surface at the point marked Air shaft, and the fissure being substantially vertical as I now hold my ruler the strike of that fissure would be substantially parallel to the Ashland fissure would it not?

A. Yes, sir.

Q. Now between the Sampson fissure and the Ashland fissure, as you go through the Turnsheet level have you any other north and south fissure?

A. A small fissure.

248 Q. Where?

A. At the Turnsheet level.

Q. Where abouts? The Yellow is all Turnsheet level?

A. At the Turn-sheet here, I think, the Turn-sheet there; some small fissures there. That would be point 409.

Q. Near station 409?

A. Yes, sir.

Q. Is that also a north and south fissure?

A. Nearly so.

Q. Practically parallel with the Ashland and Sampson?

A. Yes, sir.

Q. Ore in it?

A. Yes, sir.

Q. Is that a separate and independent vein in your opinion?

A. I think so.

Q. Then as you go easterly from the point last indicated, 409, do you go westerly upon that until you come to the Ashland fissure so-called—have you any other north and south fissures?

A. I think not.

Q. You think not. You find the easterly limit of the Ashland fissure in the Turn Sheet level about 15 feet west of station 415?

A. About that; at 414 I have got it here.

Q. 20 feet? That would bring it to about station 415?

A. About that.

Q. Where you found the easterly limit of the Ashland fissure?

A. Yes, sir.

Q. Where do you find its westerly limit?

A. At point 420.

Q. You found it there?

A. That is my opinion of that.

Q. Of that ore body between stations 420 and 415, there is ore all through?

A. Yes, sir.

Q. Cut by these workings?

A. Yes, sir.

Q. From station 415, or thereabouts, back to where you had a parallel north and south fissure at 409. Is the ore that you found in the Turn-sheet level in a bed vein?

A. In the bed vein.

Q. And then from 409 going easterly, how far did you continue in the fissure that you have at that station 409; how wide is that fissure?

A. It passes on through; I don't know.

Q. About how wide is it?

A. About a foot or ten inches.

Q. So that when you get to 409 you come to the bed vein?

A. When you go beyond this between this and the Sampson fissure there is ore all the way through there with bedded planes with the exception of a space of about 15 feet.

Q. Of lime?

A. Lime.

Q. So that when you leave the fissure that you had at station 409 and pass easterly under the Turn-sheet level, when you come to station 408, if I understand you, the ore there is in the bed vein again?

A. The point where we pass through the lime——

Q. The ore between those points is in the bed vein?

A. Yes.

249 Q. And then near 408, you come into the Sampson and you are still passing along in ore all the time?

A. Yes, sir; all the time.

Q. And you are in the Sampson fissure until you get to station 407?

A. A little beyond 407.

Q. Between 407 and 406?

A. Along about right here.

Q. Between 407 and 406 somewhere; here is 406 and here 407?

A. About there where the fissure crosses.

Q. That would be about where the south or westerly side line of the Ashland crosses—the easterly side line of the Ashland crosses that fissure, about there where you pass it again?

A. Of the Sampson fissure, yes.

Q. And then you continue in unbroken ore out to about 404 in the bed vein again?

A. No we do not. It is in ore. There is lime about 15 feet there from a point—there should be a point there right in the edge of the stope. From there 15 feet easterly there is ore laying in the form of a bed??

Q. Through here, it is in ore?

A. Yes, sir.

Q. Whatever ore you had in the Turn-sheet level at the time you started easterly from where you got the last ore in the Sampson fissure, until you get to station 404, whatever ore there is in that level, is in the bed vein?

A. No, sir; I don't think—there is a fissure passing up here.

Q. A fissure passing where?

A. What seems to be a fissure passing here.

Q. That is at the station I take it south between stations 405 and 406 is it?

A. Yes, sir.

Q. There would be another north and south fissure?

A. I do not remember that it passes to the south.

Q. But you have a fissure disclosed in that work running south?

A. A small drift driven south in the ore.

Q. On the fissure?

A. It may be a bed.

Q. You spoke of it as a fissure?

A. Well, it has the appearance of a fissure; it may be a fissure.

Q. Have you any opinion about it, or is it in the bed vein?

A. At this point?

Q. Which point, 407?

A. Corresponds to 407 ten feet about east of 407; then there is ore 15 feet.

Q. That is a bed vein?
A. Bed vein—at this point there is lime.
Q. From 406 about half way to 405 is in lime?
A. Is in lime with the exception of that drift in the ore there.
Q. And that you do not say whether it is in a fissure or bed vein?
A. No; I do not.
250 Q. Then you take it up here again when you get easterly of 405 on the Turn-sheet?
A. There is ore here.
Q. At 405?
A. Yes, sir.
Q. And it continued easterly in the bed vein to what point?
A. To the bottom of the Kempton stope.
Q. Have you told us whether there is ore between 403 and 404 in the fissure vein?
A. Well, over there at 404 it takes the form of a bed again.
Q. And from 404 easterly you are in another fissure vein?
A. The Kempton fissure, yes, sir.
Q. Now practically from station 420 to station 403, you had been in continuous ore, except the slight interruptions of lime that you have spoken of, haven't you?
A. All the way there, with the exceptions of lime I spoke of.
Q. Now coming to the entrance to the Ashland No. 2 tunnel, where do you say you got the contact between the underlying quartzite and the overlying lime?
A. I can't see that point.
Q. Right here where I hold my pointer?
A. Right at the crossing there.
Q. That is station 702. And there right at the contact you have ore, haven't you? on the contact between the underlying quartzite and the overlying lime?
A. We have ore right in the quartzite.
Q. I say at station 702 you have ore at the contact?
A. We have the contact there.
Q. You have ore there? Answer the question?
A. We have ore there.
Q. There is a place marked "stope" westerly from station 703. That is in lime isn't it?
A. Yes, sir.
Q. And it is ore, isn't it?
A. Yes, sir.
Q. And its course is practically at right angles with your Ashland fissure, is it?
A. Yes, sir.
Q. That is in the bed vein?
A. That is in the bed vein.
Q. There can be no doubt about that in your opinion?
A. From appearances that is my opinion.
Q. Do you know how near that stope which is in the bed vein is to the surface?
A. I do not.

Q. Do you know that if that is in the bed vein that of necessity as shown on your surface map—here is the same place on your surface map?

A. Yes, sir.

Q. Now you had ore there at the surface?

A. Yes, sir.

Q. In your tracing at station 904?

A. Yes, sir.

Q. And here you have ore again in the bed vein?

A. Yes, sir.

251 Q. If that be true and your opinion be correct then this has crossed the side line of the Kempton between stations 2 and 3, isn't it of necessity the same vein?

A. I think so, yes.

Q. Now going in the upper Ashland tunnel at station 606 we come to a line of work running to the west and marked West drift and connects with the working called Raise near the face in the West drift?

A. Yes.

Q. Is that in ore?

A. Yes, sir.

Q. And it is running practically at right angles with your fissure?

A. Yes, sir.

Q. Is it in the bed vein?

A. In the bed vein.

Q. Where does the ore that you have got in the fissure vein in this level quit and the ore of the bed vein commence?

A. It don't quit.

Q. It don't quit?

A. No.

Q. It is ore all the way?

A. That is the Ashland fissure.

Q. And it is continuous ore from the ore you have in the Ashland fissure?

A. Right out there.

Q. Clear all the way up?

A. Yes.

Q. What I want to get at is as you go westerly from the Ashland tunnel to near station 606, where did you pass out of the ore which you call fissure ore and come into the ore that you call the bedded vein ore?

A. We do not pass out of the ore, until you go in the West drift; this drift goes from the Ashland tunnel, beginning at 606.

Q. It commences in ore?

A. Commences in ore.

Q. And continues in ore?

A. Passes right out to its face in ore.

Q. Now the ore you have at station 606 you say is in the fissure don't you?

A. Yes, sir.

Q. Pay attention to my questions. Having ore in the face of that

drift to station 606 and you having told us that the ore at station 606 is in the fissure and the ore in the west drift is in the bedded vein, I want to know where in that line of working you draw the line of division of that ore body which distinguishes the fissure ore from the bedded vein ore?

A. I understand you now. I believe that raise—there is another raise there marked Raise that is about the edge of that fissure.

Q. And from then west you are in the bedded vein?

A. It takes the bedded form from here.

Q. That is a raise going up from the level of the Ashland tunnel a little west of Station 606; that is it?

A. Yes, sir.

Q. Now that raise goes up on the bedded vein?

252 A. No. No, I believe that goes up on the fissure to the bedded vein.

Q. Does it not go up flat upon the bedded vein?

A. I understood you to ask, your question was as to where the division was.

Q. You have answered that. New I ask you about this raise. Does not that raise go up flat on the dip of the beds and isn't it a part of what you call the bedded vein?

A. Yes; I believe it is; that is that section there.

Q. Now this work following down from the Dunstan stope, does that come to the surface at the point marked air shaft?

A. At the point marked "Air shaft."

Q. Going down the line of workings marked——

A. 100.

Q. From 100 down, a line of work marked "Raise" to station 106 are you following a bed vein or a fissure?

A. A bed vein.

Q. A bed vein. Right here at the Air shaft you had that bed vein in it and the fissure vein in the Sampson workings?

A. Yes.

Q. Now as you go down the workings marked "Incline drift" from station 106 down to the station 109, are you going down in the fissure?

A. No; a bed.

Q. Following the bed down there? What is the width of your fissure vein on the Ashland fissure vein on the Turn-sheet level?

A. Well, where you defined the points, I thought I gave you that.

Q. No?

A. 175 or 180 feet.

Q. Oh, no scale it. I want to see how much bigger or wider it has got than at the level below. 415 to 420?

A. It would be 120.

Q. Now when you get to the level below?

A. It is 24 feet.

Q. That would be it?

A. That would be about right.

Q. Now following down 70 feet below that, I think somebody

testified to 70 feet down to the red level of the West drift. How wide is your Ashland fissure there; nearly 200 feet wide isn't it?

A. No; I think not.

Q. About 185?

A. Somewhere around 170 to 180.

Q. Just measure it?

A. 180.

Q. So that on the west drift the lower level, your Ashland fissure vein extends further to the west than it does on the Turnsheet level, does it not?

A. Yes, sir.

Q. It extends also on that red level further to the east than it does on the Turnsheet level?

A. Yes, sir.

Q. So that as you went down from the Turnsheet level to the red level, your fissures instead of dipping to the west must
253 have been dipping in both directions, diverging, weren't they; spreading as they go down like a fan?

A. That is the appearance of them down there.

Q. And then how can it be said that this fissure has a dip to the west of 70 degrees?

A. Do you want me to answer that?

Q. I did but we won' stop. From station 515—is it there that you found the easterly ait of your——

A. According to my notes——

Q. And from 512 that red work on that level running to the south is in ore?

A. Yes, sir.

Q. And that ore is in the bed vein is it not?

A. Beyond that.

Q. Beyond station 512, east and south.

A. From 512 on that same level.

Q. This level from five to seventeen is in the bed vein, if I understand you?

A. This is the east boundary of the fissure.

Q. And then this must be in the bed vein?

A. This is the bed vein from this point. The bed vein seems to form east of that point.

Q. And then this red working here southerly from station 512 is in the bed vein?

A. Yes; it is right on the edge of the fissure. I remember very distinctly now about that.

Q. This little point running out easterly from station 512, is that in the bed vein?

A. That is a part of the bed vein, yes sir.

Q. Could you give us the angle of the dip or have you the difference, horizontal difference in elevation.

A. It will take some time to figure it out.

Q. I wish you would be good enough to take the difference and make a memorandum of it—not now, but as soon as you are off the stand, the difference in elevation between the Turn sheet level and

the West drift, the horizontal distance and the distance easterly that the fissure vein extends in the West drift beyond where it was found in the Turn sheet level and the distance that it extends Westerly to where it is on the Turn sheet level, and draw a diagram of what kind of a fissure you must have had there?

A. What do you mean. This from where I found the cast boundary here in the Turn Sheet level?

Q. Yes.

A. To where I found it here.

Q. How much further east?

A. And where I found it here.

Q. How much further west than here at 517 and the difference in elevation between the Turn Sheet level and the West drift and the horizontal distance between the two, taking a medium and
254 tell us what angle the dip must have been to have carried that from the Turnsheet level into the West drift. Do not stop to take time to do it now.

Q. As you go into the ground from the surface following down in the workings, where do you find the last evidences of the vein? in what level?

A. The last evidence of the bed would be here.

Q. In this little drift?

A. No; along through here.

Q. Didn't you tell us that was all fissure vein and tell us that it was 180 feet across it; didn't you say it was all fissure from station 512 to the west face of that working?

A. No; I am taking this to the bottom.

Q. This is all fissure?

A. This is where it shows, in this little raise that runs up from there.

Q. Is there any raise there?

A. There is a little raise perhaps ten or twelve feet.

Q. Have you outside of the ten feet of work east of station 512 any evidence of a bedded vein on that lower level?

A. Outside of that at the station, no.

Q. All the ore that you have seen on that level in your judgment is referable to the fissure vein?

A. To the fissure vein.

Q. So that so far as the explorations go it would appear that at or above that level there had been a complete union between the bedded vein and several independent fissure veins which you have spoken of?

A. It may be possible that the bedded vein has widened out at that point, or the fissure.

Q. The fissure widened out?

A. Yes, sir.

Q. The bedded vein is no longer discernible?

A. Except at this point here.

Q. Were you out in this working in that ore about station 806?

A. I have been out there.

Q. Is it your opinion that the bed vein from the point where you find it uniting with the fissure vein continues on northerly on the

fissure vein or has it become united with it and are they inseparable from the point of junction on them?

A. I cannot answer that.

Q. Answer the question if you can?

A. What is the question?

Q. In your opinion is the fissure or bedded vein found north of the point of where in your opinion the bedded vein has united with the fissure vein or do they from the point of junction continue thence on in their downward course as one and the same vein. Do you understand it?

A. I don't believe I do.

255 Q. We have the bedded vein somewhere here?

A. Yes.

Q. Dipping with the bed?

A. Yes, sir.

Q. And fissure vein here?

A. Yes, sir.

Q. And another one there and another one there?

A. Yes, sir.

Q. Now you tell us the bedded vein has united at various levels, different levels and different places, the bedded vein has united with the fissure vein so that their ores are intermingled.

A. No; that is not my idea of the bedded vein. I don't think I conveyed that impression; if I did I did not intend to do it. I claim these beds have been formed from the fissure.

Q. That all the mineralization found in what you call the bed vein has come from these fissures?

A. In this particular case.

Q. Do you mean by this particular case the case on trial?

A. No; anything in this belt along here which shows the same evidence as shown over here; you just asked me about this one in the tunnel. I found the same evidences over there.

Q. Is there any bedded vein here that is due to the fissure?

A. Only just where it appears between the fissures.

Q. And that you think came from the fissures?

A. That is my opinion.

Q. And then it would be all one fissure vein, would it not?

A. No.

Q. If the entire mineralization that you have here is due to these fissures there must be either one of two things, I take it; that there are a series of north and south veins or that all the mineralization that you have in the territory that you have covered in your direct examination must be in one and the same vein; which is true? Is that so?

A. No; I claim there are a series of fissures which you have just described and that the ground or rocks which is most susceptible to erosion has been influenced from the fissures and formed the bedded vein the way I explain this thing, that the bedded veins are not so strong except it comes on the contact between the lime and the quartzite. In that case I find over in this country you are speaking of that the veins are very plainly marked in the contact.

Q. I do not want to take up too much time but I want to understand the witness. I will see if my understanding is correct. Your theory is here we have say a fissure and here at station 409 we have another fissure parallel to the Ashland. Here we have the Sampson fissure which you have already identified; here we have the Kempton incline fissure, all four of these being substantially parallel one with the other; and your theory is that all the ore in the territory
256 that you have been testifying about came from these several fissures and made into the limestone from one or the other?

A. Yes; that is my theory.

Q. And your opinion is that these fissures and the mineralization therefrom all took place during the same period?

A. Yes, sir.

Q. Tell me where, if at all or north of the West drift any where you find the bedded vein?

A. This is the point I do not care to go over to to speak of unless I am compelled to.

Q. I do not want to compel you to do anything?

A. I will if necessary; I will explain what I found in that level.

Q. My question is where to the north of the red level on this Exhibit 21 do you find the bed vein at all?

A. If the court pleases this is the point about which I am entirely at sea although on cross examination I refreshed my memory somewhat but still I am not certain.

Q. I am not asking about that?

A. Beyond this I cannot tell.

Q. Where north of this level, where north of the Kempton workings the most northerly workings of the Kempton, if at all, do you find the bedded vein?

A. I have not found it.

Q. Have not found it?

A. Not to my recollection now.

Q. No where underground?

(No answer.)

WILLIAM R. SMITH, a witness produced by the defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Your name is William R. Smith?

A. Yes, sir.

Q. Where do you live?

A. I live part of the time at Bingham and part of the time in Tooele County. My home is in Tooele County.

Q. How old are you?

A. Forty-two.

Q. How long have you lived in Utah?

A. Born in Utah.

Q. What is your business?

A. Mining.
Q. Mining?
A. Yes, sir.
Q. When you say you live at Bingham what do you mean?
A. That is, my wife and family live at Tooele.
Q. That is in the West Mountain Mining District. You have been mining in the district?
A. Yes, sir.
Q. How long?
A. I have been there between twelve and thirteen years.
Q. In what capacity have you been engaged in mining?
A. Well, in nearly all of them, from prospecting, sorting ore and managing for a company.
257 Q. You have been a superintendent?
A. Yes, sir.
Q. Of mines?
A. Yes, sir.
Q. You have worked underground as a common miner?
A. Yes, sir.
Q. Are you familiar with the rocks which constitute the different strata of the country in the neighborhood of the Kempton mine?
A. Yes, sir.
Q. You know the Ashland mine and Kempton mine?
A. Yes, sir.
Q. You know limestone, quartzite and porphyry?
A. Yes, sir.
Q. Do you know the mountain called Jordan Hill?
A. Yes, sir, if that is it upon the Kempton; that is the first I heard it called that, in the court room here.
Q. Of what does that mountain consist? What does the strata consist of?
A. Quartz, lime and porphyry.
Q. Quartzite?
A. Quartzite; yes, sir.
Q. And lime and porphyry?
A. And lime and porphyry; yes, sir.
Q. How are the bodies laid?
A. Why, there is a bed of quartzite dipping north, the stratification running east and west, the lime lying on top of that, with the strata running some east and west or nearly so, and the quartzite on top of that, and lime on top of that again.
Q. You found lime again? Do you know of the existence of fissures in the strata or crossing the strata?
A. Crossing the strata; yes, sir.
Q. There are such?
A. Yes, sir.
Q. Do you say that they cut through both the lime and quartzite?
A. Yes, sir.
Q. You know the fact that they do?
A. Yes, sir.
Q. You know ore when you see it, of course?

A. Yes, sir, sometimes. Of course I have been fooled.

Q. You are familiar with the ores that are found in that district?

A. Yes, sir.

Q. And with the ore in Ashland and Kempton mines?

A. Yes, sir.

Q. I will ask you, Mr. Smith, if you made an examination of the surface and of the underground workings of both the Kempton and Ashland claims for the purpose of determining the apex?

A. Yes, sir.

Q. If any there is in the Ashland ground, and the apex, if any there is, in the Kempton ground, and their dip into the earth and continuity from the surface down?

A. Yes, sir.

Q. You have made such examination?

A. Yes, sir.

258 Q. How much time have you spent in that examination?

A. Oh, several days.

Q. Several days. Have you seen these maps which are marked defendants' exhibits 20 and 21 before?

A. Yes, sir.

Q. You have seen those?

A. Yes, sir, I have seen them.

Q. Now I will ask you with reference to your examination of the Ashland claim for the purpose of determining and ascertaining the fissure outcropping on the surface; did you do that?

A. Yes, sir.

Q. Did you find one?

A. Yes, sir.

Q. At what point did you first observe it?

A. The Ashland fissure?

Q. Yes, sir.

A. Out in that tunnel there.

Q. In the lower tunnel?

A. Ashland No. 2 right there where it starts, right here where we got the fissure.

Q. Well, I am asking you upon the surface, where you first observed it on the surface?

A. It is right here. You can see it. It is an open cut in the tunnel, and you can see the fissure running right through the top of the tunnel.

Q. Referring to map 20, tell us what evidences there are, surface evidences or indications of a fissure?

A. This cut in here, following the fissure right up.

Q. Where did you first observe the fissure upon the surface upon that line?

A. Why, I think it was right here, right in between here, 907 and 906.

Q. What did you find there?

A. Why, there is ore in there.

Q. What did you find in reference to a north and south fissure?

A. Yes, sir, a north and south fissure right there.

Q. Well, did you proceed further?

A. Yes, sir, I went up on this stripping from 907 to 908.

Q. What did you find between those points?

A. Why, the fissure was showing there. I think we got into some quartzite along here somewheres.

Q. How near to the top of the Jordan Hill is that where you found the quartzite?

A. Oh, it may be one hundred and twenty feet.

Q. Before you get to the top?

A. Yes, sir, before you get to the top of the hill.

Q. Did you proceed from that?

A. I followed that right on through over to the next body of lime.

259 Q. Over the top of the hill?

A. Yes, sir, over the ridge to the next body of lime.

Q. Did you find a body of lime?

A. That fissure cut it; it starts right out in the lime that way; it opened right out. It is all stratified north and south here.

Q. You found ore there in the lime on the north side of the hill?

A. Yes, sir.

Q. How far south did you trace upon the surface?

A. From these cuts right down; after we get by the surface stripping—the tunnel is here, and here is the surface work—right down to the bottom of the tunnel.

Q. What is the distance upon the surface—about what distance? I want an approximate statement, from the top there?

A. From the top?

Q. From the top of the hill, the north side of the hill, down?

A. I did not measure it. I suppose it was seven hundred feet, if I remember aright, from this point, perhaps seven hundred feet, you might say, to the top.

Q. As much as that?

A. As much as that, I think, yes; maybe a little more.

Q. Now coming to the underground workings, what explorations and examinations did you make underground, if any, to ascertain the fissure? You may refer to the other map for that purpose.

A. Commencing at 700 on the Ashland, what is called the Ashland tunnel, we run here through quartzite to about 702. It is a little back there; I think that is the contact right there.

By Mr. DICKSON: How far from the 702 southerly?

A. It might be twenty feet—fifteen or twenty feet.

Q. And there you found the contact between the lime and quartzite to the south?

A. Yes, sir. The quartzite vein was going right into the bed here.

Q. What did you then do?

A. I followed in ore; that goes right back into the quartzite there. There are stopes running in there right in the quartzite, and we followed right in here in ore, with a lime wall, to 704, 705 and 706. It is there an old stope of ore in the top right in the fissure running north and south, magnetic, to about 710.

Q. There is a fault from 709?

A. Yes, sir; 710 I think it is. From 709 to 711 is a fault. It is cutting through the barren lime to about here.

260 Q. I will ask you whether you recovered the fissure again?

A. Yes, sir, at this point.

Q. Which point?

A. 711.

Q. Is that in the fissure?

A. Yes, sir, that is in the Ashland fissure. You can there see the lots of places ore in a drift from an old stope. You can see the timbers standing where it has been mostly stoped.

Q. I will ask you if it is the same fissure you saw upon the surface off here?

A. I saw connections there from one to the other, with the exception of here. There was a cut in the roof running from here—an open cut that came to the dump where it fell in.

Q. Well, between 711 and 712 on this map is marked what purports to be a raise. Do you remember going up through that?

A. I went down in there. I think that was a chute.

Q. A chute or raise, whatever you call it?

A. I went right down the chute.

Q. Did you go up?

A. No. I went that way; from this work here I went down.

Q. You went from this tunnel down?

A. Yes, sir.

Q. And you say that this which you are following here is the same fissure as the one upon the surface?

A. Yes, sir.

Q. Proceeding north of that?

A. I went right through 711, 712 and 713 to this point; this is all in ore right up to this point.

Q. What is the name of it, so that we can get it in the record?

A. Well, there is no point marked up there; there is no point at the end of that drift; 714 is the closest point.

Q. Between 713 and 714 you come to a raise; did you go through that?

A. A raise?

Q. From the tunnel, yes?

A. Yes, I went down through that.

Q. What did you find?

A. Well, there is ore all the way. There is a working marked "Crosscut" there.

Q. Did you go into that?

A. Yes, sir, into the crosscut; that is, the Turnsheet level.

Q. Well, proceed, and following along the line of fissure where did you go from 714?

A. Why, I went down here through the Turnsheet level. I have been in all of those drifts, every one that was open, and then came back to that drift again.

Q. You went from this tunnel level down the Turnsheet level. How did you get there?

A. I went down through a winze or raise.

261 Q. Well, how is it marked upon the map? At what point did you leave the tunnel to go down on the Turnsheet level?

A. Why, I think this point right here—well, it is not marked—where the raise is it is marked "Raise."

Q. And then you went down the raise into the crosscut, and from the crosscut into the Turnsheet level, is that what you mean?

Q. Yes, sir, I think I went down from that into the Turnsheet, down through this small raise.

Q. What did you find?

A. Well, I found ore all the way along—419, 418, 417, 416, 415. There is ore in everything I went into there, with the exception of a turn right here, if I remember, at 412. They were apparently drifting on the vein out this way and making a connection of some kind from one end to the other—they would run out into the lime this way and into the footwall and under the ore.

Q. Now I will ask you at what point you discovered, if at all, any widening in the fissure vein as you went in or went down?

A. At what point?

Q. Yes, sir.

A. Oh, it began to widen away back in here at 711, after we left that point.

Q. And how is it here—keep getting wider?

A. I could not tell you.

Q. Well, approximately?

A. Well, I have no idea how wide it is. There is ore on both sides of them.

Q. On both sides?

A. Yes, sir.

Q. Did you go along the crosscut? Is there a west drift there? Did you get into that?

A. West drift?

Q. It may be on the other level—the upper tunnel level?

By Mr. DICKSON: It is right where you had your pencil marked "West Drift."

Q. Marked "West drift," but it comes from this other level I am interrogating about, this Ashland tunnel. You say the ore vein widens as it goes in?

A. Why, apparently, on that fissure apparently. You keep going in there and go into a solid mass of ore on both sides of you.

Q. Well, now you have followed the Turnsheet level from 420, 419, 418, 417, 416, 415, 414, 413, 412?

A. 413, yes.

Q. Is that all in ore?

A. No, sir. From about here I think it is in lime, white lime Apparently they have run the tunnel out from under this—

262 Q. How did you get from the Turnsheet level down to the level below, if there is a level below? Go on and describe how you did it?

A. Down from this?

Q. Yes.
A. At the Turnsheet from 419 to 550 (indicating).
Q. What is the material there?
A. Ore.
Q. Is it in the fissure?
A. Why, it seems to be, yes.
Q. How do you know?
A. The strata of the rock is all standing up, which would show it to be a fissure.
Q. The ore is stratified, parallel to the fissure?
A. Yes, sir.
Q. Lengthwise of the fissure?
A. Lengthwise of the fissure; the strata is that way.
Q. And that is all in ore from the Turnsheet level down to the west drift?
A. Yes, sir.
Q. Were you in the west drift?
A. Yes, sir.
Q. What did you find there?
A. Why, I think there is ore from one end of it to there—to about here somewhere—twenty feet of 512.
Q. To 512?
A. No, about there.
Q. What did you find at 512 north of that?
A. I think they ran out into the lime there.
Q. At what point do you reach the lime?
A. Well, I think the ore begins to come in right near 512 and continues right on across it from one side to the other, and when you get about here, why you go right into the lime.
Q. This crosscut takes you out of the ore?
A. Yes, sir.
Q. Into the lime?
A. Yes, sir; mostly limestone there.
Q. What did you find on the west drift?
A. Mostly limestone when you get into it one of these north and south fissures, and there you find an indication of ore.
Q. In the fissure?
A. On the course of the fissure; yes, sir.
Q. Have you been in what is called the Wheelbarrow tunnel?
A. Yes, sir.
Q. Have you gone from the Wheelbarrow tunnel down into the upper Ashland tunnel?
A. Yes, sir; I went through all these—all of these sections.
Q. As there marked upon the map?
A. Yes, sir.
Q. Now I will ask you to refer again to this surface map. I see marked on here "Old excavations" on apex of Kempton vein. I will ask you if you looked at those excavations and the tracings which are projected upon that map?
A. Yes, sir.
Q. On the surface?

A. Yes, sir.
Q. What did you find?
A. I found ore continuous from a point here.
Q. Give the point?
263 A. A point here; there is no mark there. It would be, I consider, fifteen to twenty feet from where this post should be, over in this direction—Number 1 post of the Mountain Gem.
Q. Fifteen or twenty feet northwest?
A. I think it would be a little—yes, sir, northwest, that is right—or northeast; northeast, I think.
Q. Is that northeast up there?
A. No, down here.
Q. Fifteen or twenty feet northwest of where?
A. Northwest of this point.
Q. To what point?
A. Post 1 of the Mountain Gem, right about here.
Q. You saw the ore there?
A. Yes, sir, I think so. It takes the strata, some of it, like the fissure came through there and butted up against that; went right through the fissure.
Q. That is, you say the ore butts up against the fissure there?
A. Yes, sir, right into the fissure at this point here.
Q. And ends there?
A. Ends there. There is no ore along here. There is a shaft here on the fissure, but no ore. They cut right into the blue lime, these holes and they can't be seen going by the lime—it is not shown.
Q. How far out this way did you trace it to the west?
A. Oh, perhaps four or five hundred feet—four hundred feet from the Number 1 post here, from fifteen to twenty feet from the Mountain View westerly.
Q. This part which is marked "Old excavation," I will ask you if that bears evidence of having been mined?
A. Yes, sir.
Q. Recently or long ago?
A. A long time ago. It has caved down, as though the old workings had settled there below.
Q. The old workings there which have caved down?
A. Yes, sir; it has settled there.
Q. And the remainder of the way, what is that?
A. That is a fresh stripping.
Q. For what purpose—do you know the purpose of it?
A. For the purpose of tracing that vein.
Q. Tracing the vein?
A. That is what I understood it was for.
Q. Now I will ask you if you have gone from the surface in Kempton ground through these excavations for the purpose of determining the apex and continuity of the bedded vein and its connection, if it had any connection, with the Ashland vein, to what you call the Sampson fissure?
A. Commencing from 100, it is marked there, there is an air shaft.
Q. Did you go down that?

A. Yes, sir.

264 Q. State how you went down and what you saw?

A. I went down 100; that is marked; I went down here. It started off on about a 70 degree pitch, and then we struck into old stopes, ground that had been stoped in west of that.

Q. Mined long ago?

A. Yes, it looked like it had been mined long ago, and we continued along an old stope, or through an old stope, all the way to about 104, 105, 106 and 107.

Q. What evidence of ore did you find in there?

A. There is the ore, where you could see the ground where it had not been disturbed, or where it was an old stope. We followed, went down here right on the bedded vein to there.

Q. You followed on the bedded vein?

A. Down to Number 12.

Q. And then what did you do? Where did you go?

A. Down to what they call a cut or raise from 12 to—I don't know what number it is there at the end.

Q. Well, between 201 and 202 in the Copper drift?

A. Yes, sir.

Q. Going down, did you find ore going down that drift?

A. That is, it is down through an old stope—down through an old stope they cut the timbers out and braced it in there so that we could go down through.

Q. That has all been mined out?

A. Yes, sir, all been mined out.

Q. When you got to the Copper drift what did you find in the way of ore?

A. Why, all these drifts have got ore in them.

Q. I am speaking about the Copper drift?

A. Yes, sir, the Copper drift.

Q. This is the Copper drift here. Commencing at Station 200 in the Copper drift and going west, name the different stations?

A. 201, 211, 204, 203, 205, 206, 207, all in ore.

Q. All in ore?

A. All in ore there.

Q. From the Copper drift how do you get down to the next level? What is the next level?

A. The next level is the Turnsheet.

Q. How did you get down to the Turnsheet level?

A. Down through a winze.

Q. Where is the winze—what point in the Copper drift?

A. Here—about there (indicating).

Q. Number 7 to 8?

A. Yes, sir, I think that is it; 207 to 215, right there, I think that is it.

Q. What did you find in the winze between——?

A. Hold on, I think that is it over here.

Q. Do you remember that you went down through there?

265 A. Oh, I went down through it two or three times. I was trying to remember whether I came down through there or over here at this point, but I went down two or three different winzes.

Q. When you are in the Copper drift what are you in—the bedded vein or the fissure vein?

A. Well, in places in the bedded vein, and other places in the fissure.

Q. Whereabouts does the fissure vein cut across the Copper drift?

A. About this point here.

Q. That is not definite to get it on the record.

A. 414.

Q. Does it extend east to 414 on the Ashland vein, or into the bedded vein?

A. In the Copper drift it is west of this, or east of this incline. As I went down east and came over around in here, right in here, I came right onto the Sampson vein. That is the next fissure from the Ashland.

Q. The Copper drift is entirely in the Ashland fissure vein, is it?

A. Well, no, that is off a ways. It apparently comes together right in here somewhere, and it is hard for me to tell exactly just where it is.

Q. If you don't know, say you don't know?

A. No.

Q. You don't know where in the Copper drift the bedded vein unites, if it does unite, with the Ashland?

A. I think it does there between——

Q. Where the stratification changes, if it does change?

A. Sometimes we find it in the fissure stratification, and others in the bed as though it was joining.

Q. Whereabouts in the Copper drift do you find such a joining, if you do find it?

A. Why, they are in ore over to 207 in there, along about that point.

Q. From 207 to 200 what is it—the bedded vein or the Ashland fissure?

A. The bedded vein.

Q. So that you think the Ashland fissure comes to about 207 in the Copper drift?

A. Oh, I think so.

Q. And then the bedded vein will extend in the Copper drift back as far as 200, do you think?

A. Yes, sir.

Q. Now you say you went down the winze into the Turnsheet level?

A. Yes, sir.

Q. And you found ore there?

A. Yes, sir.

Q. And you connect the bedded vein with the Ashland fissure on the Turnsheet level in that way?

A. Yes, sir, I think it dips and comes in the Turnsheet level where it is connected with the fissure.

Q. I will ask you if you went down any other opening from the surface in Kempton ground?

A. Yes, sir.

266 Q. On the bedded vein?
A. Yes, sir.
Q. Is there such a fissure there as the Sampson fissure?
A. Yes, sir.
Q. Tell us what openings you went through from the surface?
A. 400.
Q. Into the Sampson ground?
A. I went down the Kempton incline. From 400, commencing at point 400 to 300, or 403, rather, to a point, I followed out in through here from 403 to 407—hold on, I think that is right. I went down this incline; I went off through tunnels connected with the Copper drift.
Q. You went into the incline at 403 and you came to a stope, did you?
A. Yes, sir.
Q. That stope is on the Turnsheet level, is it?
A. I believe it is.
Q. That level is marked in yellow here on the map?
A. Yes, sir, that is it on the Turnsheet level.
Q. What did you find in here in the way of ore?
A. There is a fissure there.
Q. The incline goes down on the fissure?
A. Yes, sir, goes right down on the fissure.
Q. The Turnsheet level at this point crosscuts the beds, does it?
A. Yes, sir.
Q. What did you find there in that?
A. Oh, there is very little ore. Once in a while you will see a little in there. When you get away from the fissure it gets lean until you get into another one, when it gets better.
Q. Now from this point 404 on the Turnsheet level west, when did you first begin to strike ore in any quantity, if you do strike it at all?
A. Why, on the Turnsheet level I think we began to—I don't think we got much any more from this bedded vein until we got over in here towards the Ashland fissure. The ore body seemed to make that way across these fissures, and headed for that fissure.
Q. I will ask you if it is a fact that the bedded vein rakes off across the dip of the beds?
A. I think it does—yes, sir. It rakes off that way.
Q. Towards the Ashland tunnel?
A. Apparently; of course, in ore. There is ore everywhere, and out here it gets kind of thin except where the fissure comes out there.
Q. Did you enter this tunnel which is called the Upper Kempton tunnel?
A. Yes, sir.
Q. What did you find in that?
A. We started in limestone.
Q. Commencing at the place called zero, you went into the tunnel, did you?
A. Yes, sir.

267 Q. How far in did you go, if at all, before striking the vein?

A. I think we went to about Number 2.

Q. You think you intersected the vein there?

A. I think so.

Q. You think the tunnel intersects a vein there?

A. Yes, sir, cuts the vein there.

Q. Go on in your own way and give the result of your explorations through that tunnel and the various drifts?

A. From Number 3 or about there we struck a bed vein coming through lime about there, and then there is a surface raise right back up on the bedded planes.

Q. A surface raise from the upper tunnel?

A. No; it goes right to the surface—yes, sir, from the upper tunnel to the surface.

Q. Did you go through that raise?

A. Yes, sir, I did.

Q. What is that?

A. In ore on both sides.

Q. In ore on both sides?

A. Yes, sir.

Q. Proceed?

A. Then from 400 I went through all of these holes up here, and I went down through what they called the Rope incline.

Q. To what point?

A. To this point.

Q. To what point?

A. To, I think, the Copper drift level.

Q. To the Copper drift level?

A. Yes, sir. From 309, I think, is where we commenced.

Q. 306 down to 301, did you go that way?

A. I went down the Rope incline.

Q. The Rope incline terminates at 301, does it not?

A. Yes, sir.

Q. What did you find in the Rope incline?

A. That is ore, continuous.

Q. Continuous ore?

A. Yes, sir.

Q. And then you get to the Copper drift at 301?

A. Yes, sir.

Q. Did you follow along that?

A. Yes, sir, from 301 and 302 to 500—or to 303. I get those numbers mixed; yes, 303.

Q. And then what do you strike there in the Copper drift?

A. I struck ore.

Q. Can you pursue the Copper drift on that line; from 302 or 303 how do you pursue the Copper drift?

A. Why, from 302 right on here to 306; 305 here, 306, 307—I mean on the Turnsheet.

Q. That is what I thought; you said you were on the Turnsheet level?

A. Yes, I want to correct that.

Q. You strike the Turnsheet level here?

A. Yes, sir; right out here on 307 is ore, with the exception of right there they run into the footwall of that drift. These are the two places at that point.

268 Q. The surface on the Kempton ground is connected with the ore body below in that way?

A. Yes, sir.

Q. That is to say, the surface connection from the upraise of the upper Kempton tunnel?

A. Yes, sir.

Q. Is connected with the ore body by these excavations?

A. Yes, sir.

Q. Do you know what the width of the ore body is on the Neptune tunnel level in the west drift?

A. What it is?

Q. What the width of it is?

A. No, sir, I don't.

Q. You made no measurement?

A. I never made any measurements.

Q. Or calculations?

A. No, sir; I didn't measure it.

Q. Now is there any other opening upon the surface of the Kempton ground by which you have gone down into these workings?

A. No, sir, only these two—these three; I can enter from three places.

Q. You have mentioned those three, and you have gone down all of them?

A. Yes, sir, I have went down all of them.

Q. And found them connected with the ore body in the way you have described?

A. Yes, sir.

Q. Ore body along there?

A. Yes, sir.

Q. With the ore body on the Neptune tunnel?

A. Yes, sir. They are connected through the old stopes; it is all connected with the old stopes.

Q. These ores of which you speak are ores containing what metals?

A. Iron, lead, copper, silver and gold.

Cross-examination.

By Mr. DICKSON:

Q. Mr. Smith, you find a series of practically north and south fissures in that country?

A. Yes, sir.

Q. One called the Ashland fissure?

A. Yes, sir.

Q. Another you call the Sampson fissure?

A. Yes, sir.

Q. Another is called the Kempton incline fissure?
A. Yes, sir.
Q. And that is the most easterly north and south—northerly and southerly—fissures that you have any knowledge of?
A. Oh, no. There is fissures up there; there is other fissures.
Q. Still easterly of this?
A. Fissures.
Q. Still easterly? Are they northerly and southerly fissures?
A. Not on the Kempton ground.
Q. So far as you have examined within the limits of the Kempton ground, this is the most easterly fissure?
A. Yes, sir.
Q. The Kempton incline fissure?
A. Yes, sir, in the Kempton ground.
269 Q. Now the Sampson fissure has been followed up to the surface at the point marked "Air shaft?"
A. There is a stope where the Sampson fissure would turn off at a point there right as you go down to get into the Sampson fissure.
Q. You have the Sampson fissure where I hold my finger now?
A. Yes, sir.
Q. In the Red level just north of Station 507 you have the Sampson fissure?
A. Yes, sir.
Q. You have the Sampson fissure at the surface at the air shaft?
A. I didn't see that at the top. We came down this hole here, Judge, and then we turn off to the right and strike a north and south fissure. We are going down on the bed on that side of it.
Q. Go down on this marked "Drift" of Sampson fissure?
A. That is a north and south drift.
Q. That is on the Sampson fissure?
A. Yes, sir.
Q. A continuation of the Sampson fissure that you had down here?
A. I would judge so.
Q. Now that fissure terminates there There is nothing to indicate that it goes right on?
A. No, I don't think it is cut.
Q. You think it goes right on?
A. Yes, sir, on that course. I do think that fissure goes right on.
Q. Goes right on from the limestone hanging wall into the footwall of quartzite, would it?
A. Yes, sir, I think it would.
Q. Do you also have another north and south fissure, found in the Turnsheet level near Station 409?
A. I don't know of any.
Q. If there is one there, you did not discover it?
A. Oh, there may be one; I might say perhaps it is just a crack in the rock here, and another man would say it is a regular fissure?
Q. But you did have three distinct fissures?
A. Yes, sir.
Q. The Ashland, the Kempton incline and the Sampson?

A. Yes, sir.

Q. And you say as you get away from these fissures the ore is leaner?

A. It is, with the exception in this part of the country here, apparently here, the Ashland fissure seemed to be so much stronger than these other fissures, that the main ore body continued further and connected it further at the top. As you go down it seems to be that the ore gets further apart, and you don't get much ore only where you go in a direct course with one of these fissures.

270 Q. So of course your opinion must be, I take it, that this country in which you find the ore was not enriched by these fissures?

A. I think so—yes, sir.

Q. And that the solution bearing the metals came up through one or the other or all of these fissures?

A. Yes, sir.

Q. And made out easterly and westerly in the adjoining ground and deposited the ores?

A. Yes, sir.

Q. And when you get near the surface, and for some distance below, it has been enriched from one to the other clear across, so that they have continuous ore near the surface itself, but do not seem to have as you get to a point further down?

A. Yes, sir.

Q. As I understand you, as you get further down it has the appearance of being more like three distinct veins?

A. Yes, sir.

Q. One on the Sampson fissure?

A. Yes, sir.

Q. One on the Ashland fissure?

A. Yes, sir.

Q. And one on the Kempton incline fissure?

A. Yes, sir.

Q. Now I call your attention to the working running out from the Ashland tunnel at Station 606 westerly along what is marked "West Drift" to the place. That is in ore all the way, is it not, or were you in there?

A. The west drift—I don't know that I was in the west drift. I don't remember, no, sir, of being in the drift there. There may be a drift there and caved down.

Q. Do you remember of going to a point on a level with the Ashland tunnel or a little west of 606 to a raise that went up?

A. I went through connections from one tunnel to the other.

Q. I don't care about that. Do you remember of being in that working to which I point?

A. I have been in all of them that connected——

Q. Were you in that raise then going up from the level of the Ashland tunnel, starting about eighteen feet of Station 606, to a point marked "Raise?" Did you go up that raise?

A. I did, if there is an opening through there.

Q. Have you any recollection of what you found in there?

A. Why, ore in the fissure, if I went up.
Q. The ore in that raise is not then in the bedded vein?
A. Why, both of these tunnels is right on a line of the fissure, one above the other.
Q. I am not askng about the tunnel; I am speaking of that place marked "Raise." Were you up that and do you remember anything about it?
A. If there was an opening there, I was in it.
Q. Do you remember what it was—what it disclosed?
271 A. Every place I was in there, all of the points right there, disclosed ore.
Q. Now do you remember distinctly about this so that you can testify to it?
A. No, sir, I don't about that.
Q. Don't remember anything at all?
A. No, sir.

GEORGE L. HANNAS, a witness produced by the Defendant, being first duly sworn, testified as follows:

Direct examination.

By Mr HILES:

Q. Where do you live?
A. Salt Lake.
Q. What is your business?
A. I am a miner.
Q. How long have you been a miner?
A. Since 1879.
Q. Where have you mined?
A. In Colorado and Utah.
Q. Whereabouts in Colorado?
A. Leadville, Breckenridge, Ouray, Telluride.
Q. You are the foreman of the Kempton mine, are you not?
A. Yes, sir.
Q. You have done a good deal of the work that is underground there?
A. Yes, sir.
Q. As described on these maps?
A. Yes, sir.
Q. Are you familiar with the tracings which are made on the surface of the Kempton and Ashland claims?
A. Yes, sir.
Q. You made them yourself, did you, or under your direction?
A. Yes, sir.
Q. I wish you would describe, Mr. Hannas, in your own way, these tracings and what they show on the surface, in the Ashland first, and then in the Kempton?
A. This line of tracings would be the course of the apex of the Ashland vein, beginning at that point on the surface. This is sur-

face stripping, to an old cut, I believe it is, and from that point there is a trench to the top of the hill.

Q. How wide and how deep is it?

A. Oh, the trench is probably two or three feet wide and from one to three feet deep. On this side of the hill it extends may be twenty-five feet down the other slope.

Q. On the north side of the summit of the hill beyond, on the north side of the hill?

A. Yes, sir.

Q. Beyond the summit?

A. Beyond the ridge of the hill?

Q. How is the vein exposed? What does it show if it is exposed?

A. Why, it shows the vein. It is in quartzite; that is, all of it from that point clear across to the top it shows a vein, oh, from a foot or two wide to a mere crack, but continuous ore all the way across.

Q. When you got on the other side, what does it show in the lime?

272 A. Down here in the lime the stripping only extends to the edge of the quartzite, and after coming to the lime the vein was barren. We did not find it necessary to strip it.

Q. You found the vein on the north side going down in the lime?

A. Yes, sir, going down in the lime on that side.

Q. What is the distance from the north side there down to the southwest or end line of the Ashland claim?

A. Oh, I think seven or eight hundred feet. I haven't measured it.

Q. Seven or eight hundred feet; and do you trace it upon the surface from that point over the north side of the hill to the end line?

A. Down here?

Q. Yes, sir.

A. No, sir. I trace it on the surface to this caved shaft at that point. That is as far as the surface stripping extends, but you can go into this wheelbarrow tunnel and at the back end there is an old stope; it connects with that working up to the surface of the hill in there. I was about to put a ladder in there; it had caved in, and we had a hole right up through the old stopes to connect with the mouth of the tunnel.

Q. To connect with the stopes at the surface?

A. Yes, sir.

Q. And that showed the vein through the tunnel up to the stripping in that way?

A. That was all stoped through there, and there to the back of that tunnel is stoped.

Q. Coming south from there, how then do you follow it?

A. From the face of that tunnel you go down near a winze in what we call the wheelbarrow tunnel, and we go down the winze in that tunnel, which connects with the——

Q. Maybe you can describe it on the other map better?

A. Here, this is the old Ashland tunnel, and at this point—this is the winze I was speaking of. I was mistaken about this. This is the old Ashland tunnel. One of these winzes was made beneath

the caved shaft. We did not make a hole below that, but we can look up that shaft nearly to the surface. It is only a short distance through, only twenty or thirty feet. When you get into that stope you can look right through up to the surface, and at this point is where we made the hole through in this Ashland tunnel, or wheelbarrow tunnel, to run up through this stope to the old Ashland tunnel, and it caved just as I was about to put a ladder in; but that is stoped down through and stoped back in this tunnel on the vein continuously.

Q. And in that way you connect these tunnels and this old work and this old air shaft?

A. Yes, sir, to the stripping.

Q. To the stripping?

A. And from this tunnel we came down through the winze to the Ashland tunnel, and then came to about there. We go
273 down through a winze to the Ashland No. 2 into the old stope. It is all open.

Q. Can you trace the vein out through this lower tunnel?

A. Yes, sir.

Q. Out to what point?

A. To a point there in the line of the Kempton claim. There is no point marked there.

Q. At this southern end line of the Kempton claim?

A. Yes, sir.

Q. Now turning to the stripping and excavation of the Kempton claim, what did you do there? What did you find there?

A. Well, beginning at this point is the top of the old stope, I should judge, in the Kempton vein. The vein is shown in this place there at this point, and beyond there we stripped to a point about there, having the vein continuously.

Q. What do you mean by "there?"

A. That point, it says an "elevation point," but I should judge it was about thirty feet from this point, corner No. 1, Mountain Gem. At that point there is a north and south fissure cropping. This large excavation here is mostly lime, and continues through that way with a little porphyry in here.

Q. Can you determine from that stripping where the apex of the vein ends?

A. I should judge it ends about where that elevation point is there. That would be, I should judge, about thirty feet.

Q. You think about thirty west of the point near the Mountain Gem?

A. At this point there is a north and south fissure showing ore, but between that point and this it is continuously lime through there, and does not show any ore going across it here; and in this north and south fissure there is a shaft which runs up to the surface. The first two or three feet of the shaft is that ore, and the balance of it is in lime.

Q. When you say lime, what do you mean with reference to the country rock? Do you mean country rock?

A. I mean country rock.

Q. Now how far west did you trace it?

A. I traced through all these cuts from the surface stripping to the Dunstan air shaft. That is were there was a dump. I don't know what is under the dump, but from the dump of that airshaft to the end of that stripping was continuous ore.

Q. Do you say it ends here at this stripping?

A. Yes, I would say it did; that is as far as I could see its extent.

(By Mr. DICKSON:) As far as what extended?

274 A. Why, the stripping.

Q. Turning to this other map, you are familiar with these underground workings?

A. Yes, sir.

Q. Starting at the Ashland tunnel, what would you say what you find in that tunnel, in the way of ore and the evidence of a fissure?

A. Starting at the mouth of the tunnel it appears to be all quartzite until about that point 702. At point 702 we intersect the Ashland fissure coming south from that point. We would follow the fissure probably thirty or forty feet with quartzite on both sides. Going north from that fissure we follow on the quartzite. I cannot tell exactly where the quartzite ends and the lime begins in that tunnel, but somewheres about there, I should judge.

(By Mr. DICKSON:) About the end line? The south end line of the Ashland?

A. About the south end line of the Ashland, somewheres about that; I could not say exactly, but we have a continuous vein all the way through until that point where there is a fault, which shows the vein thrown about twenty-five feet, I should judge, to the point east of drift which runs through the hanging wall of lime at that point where we strike the vein, and from that on we have continuous ore with lime walls to about point 713, I think.

Q. There the vein begins to widen, or the walls widen?

A. It is all ore from there on.

Q. The Ashland vein begins to widen at 713?

A. Yes, sir. From there to the end of the Ashland tunnel we have ore on both sides.

Q. At the end of the Ashland tunnel how do you proceed to further explore?

A. At the end of the Ashland tunnel there is a crosscut west eighteen feet.

Q. Is that in ore?

A. It is all ore except the face of it, which is against the lime wall.

Q. You strike the lime wall?

A. Yes, sir.

Q. And then how do you proceed for further explorations of the vein?

A. From that point we go back to a point—well, to a point about fifteen feet south of 714; there is a raise which you go down through and which brings us into the crosscut on the turnsheet level.

Q. Is that in ore?

A. That is all in ore; yes, sir. Following that cross cut north, we

about thirty feet to where there is a drift east from that, which is about twenty-five feet long, all in ore. The crosscut is in ore and that drift is in ore, and at the end of that drift there is drifts running north and south which are not on this map, which are all in ore, about twelve or fifteen feet long. Coming back to the crosscut, we go north again about fifty feet, which brings us into the west drift from the turn-sheet level, or the turn-sheet level drift.

Q. Is that all in ore?

A. That would be all in ore.

Q. That would be from a point—it is 418 on the turn-sheet level?

A. Yes, sir; you go north.

Q. 714?

A. That is 714; that is, in the Ashland.

Q. That is in the tunnel?

A. You go to 418 anyway. You go from the foot of this raise north ninety feet.

Q. Ninety feet?

A. Yes, sir. From the foot of that raise it is about eighty or ninety feet.

Q. To 418?

A. To point 418 in the turn-sheet level.

Q. Then proceeding, which way will you go? Go to the west first?

A. From point 418 about forty or fifty feet to point 420, all in ore, and from that point if you go south eight or ten feet—

Q. 420 is the westerly limit of the working?

A. Is the westerly limit of the working on that level.

Q. Does it terminate in ore?

A. No, sir; it terminates in lime.

Q. Against the country rock?

A. Yes, sir.

Q. Now coming back on that turn-sheet level; where did you go? How far can you go?

A. Following the turn-sheet level we could go to a point somewhere east of point 13 in ore. From point 418 to 414 you go a little past that in ore.

Q. What distance is that?

A. I should judge that was 100, 125 or 150 feet.

Q. All in ore?

A. Yes, sir.

Q. From this latter point?

A. From that point the turn-sheet level connects at the south the east wall with the bedded vein. This part of it, the lime, is from point 206 to 12. In there the stratification of the ore is with the strike of the fissure.

Q. Can you distinguish by the stratification or otherwise between that is called the bedded vein and the fissure vein?

A. Yes, sir, I think so.

Q. Whereabouts on that turn-sheet level do you make the dividing line between them—would you make them about where?

A. I should make it at about point 415.

276 Q. Up to that point you think the stratification—the ore stratification—is with the strike of the fissure?

A. Yes, sir.

Q. When you get beyond that point to the east it does what?

A. It conforms to the bed of the lime more.

Q. It conforms more to the bed?

A. Yes, sir.

Q. To the lime bed?

A. Yes, sir.

Q. Well, now going back to point 419, I notice on the map what purports to be an underground working, called the raise, what is that?

A. That was a raise from the west drift on the Neptune tunnel.

Q. And then in the west drift which is below the turn-sheet level how far?

A. About seventy-five feet.

Q. What did you find going down there?

A. Continuous ore from this point down to the foot of the raise.

Q. When you got to the west drift what did you find there in the way of ore going west?

A. Come west it is all ore to the end of the drift.

Q. What do you find at the end of the drift?

A. Lime.

Q. Is it what you call country rock? Do you say that is the westerly limit of the fissure vein?

A. That is the westerly limit of the workings.

Q. So far as your exploration goes, would you say that was the westerly limit?

A. Yes, sir.

Q. Of the fissure vein. Now going from the westerly limit east how far do you go in ore on that drift?

A. We go in ore from the west to the end of the west drift to a point about midway between 513 and 12 in continuous ore.

Q. What did you strike there?

A. Well, there is quite a broken country there at that point; seems to be a fault or fissure over there. At this point the ore or formation seems to change a little more over there.

Q. Lies with the beds?

A. Yes, sir.

Q. Going north on this crosscut what do you find?

A. Well, I will change my statement about this ore and say that there is ore through here from the point at 512.

Q. You continue on ore in the west drift to 512?

A. Yes.

Q. You wish to change your statement that between 13 and 12—?

A. The ore does not stop there. I did not mean to make that statement. The ore goes on to the end of the drift.

Q. At 512?

A. Yes, sir.

Q. Go on; in the crosscut, what do you find?

A. Coming on we find ore for about thirty feet, I should judge.

277 Q. How near to 511?

A. Well, within ten feet of it. I don't know where these points are on the ground.

Q. What do you find after that?

A. From that they go into the lime.

Q. When you say lime you mean you go into the country rock?

A. I mean to say going into the country rock.

Q. At station 510 I notice what purports to be a drift, a short drift extending west some feet; what is that in?

A. Lime.

Q. And continuing from the end of that drift west what are you in?

A. All lime.

Q. What do you mean?

A. It is all lime to a point here.

Q. When you say lime you mean country rock, of course?

A. Yes, sir. There is lime there; in this raise north it is in ore; it is nearly vertical, said to be vertical.

Q. That goes into the lime?

A. That goes up in lime to the quartzite. The top of that raise is in quartzite.

Q. This raise comes up through the lime and stops in the quartzite. Mr. Hannas, I wish you would go on and state in your own way, if it be a fact, how you can reach this ore body by openings and excavations which occur in the Kempton surface ground?

A. We can start off three different ways. Start at the air shaft; go down through the Dunstan stope to this raise and incline to the end of the upper Kempton tunnel, or drift tunnel. From there you can go north. We go down through the air shaft and through the Dunson stope and down this little incline to the end of the drift on the upper Kempton tunnel, and from there we go north to the head of the raise which is made from the copper drift; going down through that raise of the copper drift at this point and then back through the copper drift, and going on through the lead stope, if you wish, and into the lower Kempton tunnel, or you can go down through the chute here and over there into the turn-sheet level.

Q. Without following through all these various drifts, can you see any way from the top drift down to the turn-sheet?

A. Continuous ore or old stopes.

Q. Continuous ore or old stopes where ore has been mined in years which are gone.

A. Yes.

Q. Now is there any other opening upon the Kempton surface by which you reach the same thing?

A. We start in the upper Kempton tunnel and come in through here and through this west drift to the head of that same raise that we went through the copper drift, and you can go back through here down through the Rope incline. You can go through the stopes into the turn-sheet level.

278 Q. Without taking time to follow specifically through these various openings, do you say they are all in ore or old stopes?

A. Yes, sir.

Q. Now I wish you would describe, Mr. Hannas, as best you can, and I know you can, the difference in the stratification or lamination of the fissure vein and the bedded vein, if there is any; that is, where the ore occurs?

A. Why, the stratification of the ore in the fissures seems to be north and south; in the bedded vein it is east and west with the beds and conforms to the strike of the vein. The lines or lamination of the ore in both cases conforms to the strike of the vein.

Q. Is that clearly perceptible to a miner?

A. Yes, sir.

Q. Would it be perceptible to a man who was not experienced, if his attention was called to it?

A. Yes, sir.

Q. What do you say as to whether the ore in the bedded vein has a pitch or crosses the strata diagonally?

A. Crosses the strata?

Q. Yes, sir.

A. Not across the strata. I would not say; it had a pitch, but it has a rake to the west across the dip of the strata.

Q. The bedded ore vein has a rake across the pitch of the bedded strata? In which direction?

A. To the northwest.

Q. That would be towards the fissure, towards the Ashland fissure from this point, from the surface in Kempton ground?

A. Yes, sir.

Adjourned until Thursday morning, October 23d, 1902.

Direct examination of Mr. HANNAS was resumed October 23d, 1902.

Q. Referring to the defendants' exhibit 20, I observe that the tracing at the west end of the Kempton bedded vein ends at a certain point. I will ask you why that was not continued in that direction?

A. There is a large dump from this tunnel comes down over there and makes it very hard to make an excavation from that point.

Q. You could not make a tracing through there on account of the dump?

A. No, sir.

Q. I perceive on the west side of the wheel-barrow tunnel, commencing on the west side there is another tracing; what is that?

A. Well, that is the vein running off in that direction, which is a continuation of this.

Q. Is that a new tracing?

A. Yes, sir.

Q. Why did you not continue that?

279 A. Because it gets into the deep surface rock at the end of it.

Q. Referring to exhibit 20, I see from the upper Ashland tunnel so-called a drift leading to the west, that west drift; who run that?
A. I did.
Q. When did you do it, Mr. Hannas?
A. About a year ago. That was about our first work. It is on the bedded vein.
Q. How far does the drift extend?
A. About eighty feet, I should judge.
Q. About eighty feet; just describe from the start of the drift how it looks as to being in ore or in the bedded vein?
A. It is in continuous ore. There is a bed of ore of about a foot or two feet wide the full length, with lime on both sides, lying in bedded form and dipping to the north.
Q. How does the drift end?
A. Why, the drift is the same as the rest, with the vein still going on, and at this point we raised up on the bed for a matter of twenty-five feet or so.
Q. What did you find there?
A. Ore in bedded form.

Cross-examination

By Mr. DICKSON:

Q. Mr. Hannas, are you of opinion that the strike of the ore bodies in what you call the bedded vein is substantially at right angles to the strikes of the course of those fissures?
A. Practically so; yes, sir.
Q. So that when we find an ore body with a course or strike which was at right angles to the course there would be no question that the ore body was in the bedded vein?
A. Yes, sir.
Q. Now you are the foreman of the Kempton mine, are you not?
A. Yes, sir.
Q. And this stripping on the Ashland vein, as shown on exhibit 20, was done under your direction?
A. Yes, sir.
Q. Generally as to that you can probably give me better information than any other witness. I will ask you to start at the most southerly place where you have the Ashland vein appearing at the surface, in your opinion?
A. Appearing at the surface?
Q. Yes, sir.
A. It is shown in the face of this cut.
Q. That is the cut marked "Excavation A" and in which the elevation is given at the northerly end, at 1214.27?
A. Yes, sir.
Q. You did not find it at the surface anywhere south of that?
2806 A. This part of the surface is pretty well covered over with soil.
Q. It is exposed at the surface near the south end line of the Ashland claim?

A. The Ashland vein?

Q. Or the fissure?

A. No, sir, not on the surface.

Q. Now going northerly from this place where you have located it you take it up again near station 906 at the point marked "Caved shaft"?

A. Yes, sir.

Q. And you follow it up to station 907?

A. Yes, sir, on that fissure all the way.

Q. And then there is a blank space there, isn't there?

A. I think that has been filled up; I know that has.

Q. So that you follow it continuously from 907 to 909?

A. Yes, sir.

Q. That is, the surface work?

A. Yes, sir.

Q. And on to the end, of that stripping as shown there?

A. Yes, sir.

Q. And then going on to the place marked "Large excavation," which is at the northerly end of station 910, we have that same fissure passing through that working?

A. Yes, it is apparent from here on. You can see it from the surface. It is underneath the surface there.

Q. From 909 on through to where I have my pointer, the place marked "Large excavation;" this is the Ashland fissure and is traceable on the surface?

A. Yes, sir, without any stripping at all.

Q. And then you pass out of the large excavation and can trace it on the surface up to the place marked "Old cut"?

A. I think I can. I have not examined it very closely, but there is evidence of the vein through there, yes.

Q. You mean the Ashland?

A. The Ashland.

Q. Fissure vein?

A. Yes, sir.

Q. And do you trace it to the northerly edge of that old cut passing on through?

A. I think so.

Q. And when you trace it on in the same course exactly, it is found still further to the north?

A. I have not tried it.

Q. You have no doubt but what it does continue clear across?

A. I have no doubt but what it continues clear across.

Q. About in the direction you have traced it thus far?

A. Yes.

Q. I did not understand what you said as to where you encounter the quartzite or the contact between the quartzite and the lime as you passed from the mouth of the Ashland No. 2 tunnel and going into tunnel No. 1?

A. I did not locate exactly. As you enter the tunnel that is all lime; all quartzite to the point where the vein is intersected.

281 Q. Now right at the contact between the quartzite and the lime you have ore?

A. At this point it is timbered; it is in there that I think the quartzite occurs, but it is timbered up and you cannot see it all very well.

Q. It is not marked on the maps. Perhaps we had better go to this exhibit 21; westerly from station 703 a piece of work in white marked "Stope" that is in ore?

A. Yes, sir.

Q. Ore is there?

A. I think so. I never examined that part of it carefully. There is ore there (indicating).

Q. That is about at right angles to the course of your fissure, isn't it?

A. About that.

Q. Do you understand, Mr. Hannas, what is meant—has Colonel Wall ever explained to you what is meant by a deposition of mineral by metasomatic action?

A. No, sir.

Q. You have heard of it?

A. Yes, sir, heard of it.

Q. Have you seen in this mine anywhere ore which evidently was the result of a replacement where the lime had simply been eaten out and ore deposited in the place of the lime so that the lime structure is yet preserved, though the mass is ore?

A. I presume I have.

Q. Do you find much of that in this mine or little—in the ore bodies in this mine?

A. A great deal of it; yes, sir.

Q. A great deal of it bears evidence of having been deposited in that way by replacement?

A. Yes, sir.

Q. Which has the most westerly north and south fissures that you have discovered in this country—the Ashland?

A. Yes, sir.

Q. And that is developed, is it, in what is called the wheelbarrow tunnel?

A. Yes, sir.

Q. And that wheelbarrow tunnel is not near the surface?

A. Yes, sir.

Q. And then you spoke also of the Sampson fissure?

A. Yes, sir.

Q. In your direct examination, and told us where it was. This work here marked "Drift" or Sampson fissure is on that fissure?

A. Yes, sir.

Q. And did you go from further north on the red level, that is, on the Sampson fissure?

A. Yes, sir.

Q. And the ore bodies on northerly to a place marked "Lower stope" and "Upper stope" are on the Sampson fissure?

A. On the Sampson fissure.

Q. You were down what is called the Kempton incline?
A. Yes, sir.
Q. And that comes down lower in the fissure?
A. Yes, sir.
Q. And these three fissures are substantially parallel in their strike?
A. Yes, sir.
282 Q. In the Kempton ground, is the Kempton incline fissure the most easterly fissure you have that you know anything about running north and south?
A. In our workings that is most easterly; yes, sir.
Q. Is it your opinion also that the mineralization of ore bodies that are found in this Kempton territory and Kempton workings had their source from these north and south fissures?
A. Yes, sir.
Q. And all the ore that you have there came through one or the other of all of these fissures and fed out into the lime in places?
A. Yes, sir.
Q. And that would be your judgment?
A. Yes, sir.

Redirect examination.

By Mr. HILES:

Q. Mr. Hannas, you do not understand the technical term of metasomatosis?
A. No, sir; I do not claim to be an expert.
Q. You are a common miner?
A. I am a common miner.

Recross-examination.

By Mr. DICKSON:

Q. Following in this fissure, the Ashland fissure, I call your attention to a place a little southerly of the station 909 marked "Old cut and cave" going off in this direction. That is in lime?
A. It appears to be on the contact of the lime and the quartzite.

ISAAC B. HAZELGROVE, a witness produced by the defendants, being first duly sworn testified as follows:

Direct examination.

By Mr. HILES:

Q. Your name is Isaac B. Hazelgrove?
A. Yes, sir.
Q. How old are you?
A. Fifty-four.
Q. Where do you live?
A. Bingham Canon.
Q. Bingham Canon; that is in the West Mountain Mining District in this county?

A. Yes, sir.

Q. How long have you lived there?

A. I have lived here most of the time for twenty-eight years.

Q. What is your occupation?

A. Mining.

Q. How long have you been a miner?

A. I have been mining for about twenty-eight years.

Q. In what capacity have you mined?

A. I worked by the day in mines for two or three years for wages. Since that time I have been leasing and had charge of mines as foreman.

283 Q. You have been mining on your own account in that district?

A. Yes, sir.

Q. Have you ever examined mines for other parties for the purpose of reporting on them?

A. No, sir, I have not.

Q. You have not done that? In your business as a miner in twenty-eight years, can you say that you have become acquainted with the different rocks? which compose the earth's crust in that district?

A. Yes, sir.

Q. And in the neighborhood of the Kempton mine?

A. Yes, sir.

Q. You know where the Kempton mine is?

A. Yes, sir.

Q. And Ashland mine?

A. Yes, sir.

Q. State generally, Mr. Hazelgrove, if you know what the rock is in the neighborhood of the Kempton mine—the different strata, if there be different strata, and their strike and dip?

A. Quartzite, lime and porphry in the formation.

Q. How do they lie with respect to each other and what is their dip and strike?

A. The dip of the fissure veins was about seventy degrees, something like that—sixty or seventy to seventy-six, along there; probably eighty, some of them. They have different dips.

Q. I am speaking about the strata of the earth?

A. Well, the strata lays with the formation—dips with the formation.

Q. How does it strike—east and west?

A. Easterly and westerly.

Q. What is the dip?

A. Northerly, or northwesterly, and south or southwesterly, I should say.

Q. How do they lie with reference to each other? That is, the quartzite and the lime?

A. They lie on top of each other as they lay in the beds. First comes quartzite and probably lime, and there might be some porphyry; that is the way they lay, and they generally dip to the north.

Q. I understand the different strata alternate?

A. Yes, sir.
Q. One after the other?
A. One after the other.
Q. Having a general east and west strike and a northerly and southerly dip?
A. Yes, sir.
Q. Now with respect to the fissures, what do you know about the fissures?
A. The fissure veins run northerly and southerly—some of them almost due north and south.
Q. Across the bedding planes?
A. Across the bedded planes; yes, sir; that is the formation right through.
284 Q. Speaking now the Ashland, on what is the Ashland claim located?
A. On a fissure vein.
Q. On a fissure vein?
A. Yes, sir.
Q. And what is the Kempton claim located on?
A. That—well, the Kempton vein is located on a fissure vein too, I believe there is a fissure vein in the Kempton, but I think it is located on the contact east and west on the vein.
Q. On what is called the bedded vein?
A. On the bedded vein.
Q. There is a fissure also cutting across the Kempton?
A. Yes, sir.
Q. Do you know what it is called?
A. The Kempton fissure, I believe.
Q. The Kempton fissure. Where does that lie—where is that situated with reference to the Ashland fissure? Point out where the Kempton fissure is with respect to the Ashland fissure?
A. Let me get my bearings here a little.
Q. It is somewhere in the neighborhood here?

By Mr. DICKSON: That is the Sampson.

A. The Kempton fissure and the Sampson look there as though they were the same.
Q. Here is one marked "Sampson" fissure, and this is marked "Kempton" fissure?
A. This is the Kempton fissure here (indicating).
Q. Where does that lie with reference to the Ashland fissure?
A. It lies easterly.
Q. I see on the map a fissure called the Sampson fissure?
A. Yes, sir, I remember that.
Q. Is there such a fissure there?
A. Yes, sir, there is such a fissure there.
Q. That lies west of the Kempton fissure as marked on that map?
A. Yes, sir.
Q. To the east between the Kempton—?
A. And the Ashland.
Q. Now I will ask you if you have recently made an examination

of the Kempton and the Ashland claims for the purpose of determining whether there is a lode, and if there is any there whether it has a dip?

A. Yes, sir, it has.

Q. From the surface in the ground of each?

A. Yes, sir.

Q. And whether the lodes, if there be lodes there, are continuous from the surface in the ground of either of the claims to the bottom of the lowest workings; have you made such an examination?

A. Yes, sir.

Q. Well, now starting with the Ashland, tell us what you did and what you saw and what you did in the way of an examination and what was the result of your examination and investigation.

A. I went into this tunnel, started right at 100, followed along on that portion here which I called quarzite, and I went on to 704, 705, 706, right on through this tunnel to 709 and 710, and I went on through here. I went into this west drift; I went down here and went back into this west drift.

Q. Speaking about that west drift there, what did you find out there?

A. This is the ore through this west drift.

Q. Clear to the face?

A. Yes, sir. I think it is getting a little smaller probably, but I think it is in ore yet.

Q. Can you say whether it is fading out as it goes in that direction?

A. I would not say positively as to that.

Q. Did you go into the upraise?

A. Yes, sir.

Q. What did you find there?

A. I found ore there.

Q. And this other work marked "Upraise"?

A. Yes, sir, that is in ore.

Q. Now you may proceed in your own way?

A. I went on through here in this tunnel right along to—

Q. Going along, what did you find in the way of a fissure?

A. I found a fissure right along—

Q. Did you find ore?

A. Yes, sir, and I went out into this other level here and into this level to the country back here.

Q. Came back and went up into the upper tunnel?

A. Yes, sir.

Q. Upper Ashland tunnel so-called?

A. Yes, sir; I went into this—

Q. What did you find in going through the upper Ashland tunnel in the way of a fissure?

A. I found a fissure right along here.

Q. Right along?

A. Right along.

Q. Does the tunnel extend beyond that?

A. Yes, sir, the tunnel goes along here.

Q. Did you find a fissure here in that tunnel?
A. I think—yes, the fissure was along in here.
Q. That is in the upper Ashland tunnel?
A. Yes, sir.
Q. Where did you proceed from the upper Ashland tunnel?
A. I went down here into this tunnel.
Q. "Down here into this tunnel" is not very explicit?
A. I went down to the Turnsheet level, 415.
Q. From what station to what station?
A. To Station 207.
Q. And the Turnsheet level?
A. Yes, sir.
Q. What did you go through to get to that level?
A. I went through ore.
286 Q. Was it through a winze?
A. It was a winze leading down.
Q. From the upper Ashland tunnel to the Turnsheet level?
A. Yes, sir.
Q. Well, how did you proceed then and what did you find in the way of ore?
A. I found ore all through here.
Q. All through what?
A. The Turnsheet level to 417, 419, 418 and 420. I found ore all along here.
Q. And then where did you go to?
A. I went down this raise to this drift.
Q. The west drift?
A. Yes; that is, 517, 515.
Q. What did you find in going down the winze from the Turnsheet?
A. I found ore all the way down?
Q. Found ore all the way down?
A. Yes, sir.
Q. When you got to the west drift where did you go?
A. I went to the end of the west drift here, 533.
Q. What did you find there?
A. Ore.
Q. How was it at the end—did it end in ore?
A. Yes, sir.
Q. Ended in ore?
A. Yes, sir, some ore. There wasn't very much ore there though.
Q. And then where did you go?
A. Well, I came back and came through this tunnel here to 512.
Q. What did you find from the west end of the west drift to 512?
A. I found ore all the way right along that.
Q. Did you go north in the crossent?
A. Yes, sir.
Q. What did you find there?
A. I would not be positive about finding any ore; I think I did though. I think there was ore there; I would not be positive of that.
Q. All the way?

A. Yes, sir.

Q. When you got to the west drift what did you find there?

A. I don't think I found any ore along there. There may be some ore at 508 and 509. I don't think there is much ore there. Now I don't remember—

Q. Did you go up the upraise from the end of the crosscut?

A. Yes, sir.

Q. What did you find there in the way of ore?

A. This upraise is in ore.

Q. That upraise is in ore?

A. Yes, sir.

Q. Then going east from there, is it in ore?

A. I don't think I found much ore here.

Q. Much—what do you mean by much?

A. I think it is mineralized somewhat, that is all.

287 By Mr. DICKSON: Between what points?

A. 507 at this drift here on the west drift.

Q. I am inquiring from here west, what did you find there?

A. I don't think I found any ore there.

Q. Well, along the whole of that drift did you find ore?

A. I think not very much ore here. It seems to me it was all ore; I am not positive about that.

Q. Well, now when you got—?

A. I will tell you, I have been through all of these places here, and I know the general course of this fissure vein in the Ashland and also up to the Kempton, but I don't remember of these places that I went through; I don't remember them at all, and I can't remember them at all.

Q. Now I am inquiring about this country here; do you know whether there is any ore there?

A. I don't remember about there being ore there at all in this west drift.

Q. Now how did you get here to the Kempton tunnel, or the Neptune tunnel?

A. I came down—I went out of that west drift to the Neptune tunnel, but I don't remember in regard to that. I remember the Sampson fissure. I know there was some ore there in the Sampson fissure.

Q. Well, now returning to the Turnsheet level?

A. I think that is it here. Here is the Turnsheet level.

Q. I will ask you if you examined the country here on the Turnsheet level?

A. Yes, sir, I did.

Q. From this point—what is the number?

A. 420.

Q. 420 is it?

A. Yes, sir.

Q. What did you find along that?

A. I found ore from the 420 and back to 206 and so on, 205, 202, 211; I found ore all through there.

Q. Now can you say that there is any difference in the line of de-

markation between the ore that exists in the Ashland fissure and the Kempton bedded vein so-called?

A. Yes, sir.

Q. Where is that line—the east line?

A. Well, now I think the east line is—let us see, I think the bedded vein shows at this point right here 606.

Q. The bedded vein shows right there?

A. Yes, sir, I think so.

Q. And then going down on the Turnsheet level, where is the line of demarkation?

A. I think the line is in the Turnsheet level.

Q. This yellow is the Turnsheet level; I am speaking of the Turnsheet level; you are not pointing to that; you mean on the Turnsheet level?

288 A. Yes, sir, I mean the Turnsheet level.

Q. Do you say it is there?

A. No; I say it is about here.

Q. Is that on the Turnsheet?

A. In that stope. This is in the lead stope.

Q. Is that on the Turnsheet level?

A. No, sir, not in the Turnsheet level.

Q. I am asking where, if you know, if you don't know, say so, on the Turnsheet level, which is colored yellow, is there any line of demarkation?

A. I think the line comes up to about 415.

Q. On the Turnsheet level?

A. Yes, sir.

Q. On the copper drift level, where is it?

A. I think it is down—I would not say positively about that.

Q. When you pointed here what did you mean by that? You said it was here, didn't you, the line of demarkation? What do you mean by that?

A. I mean to the left of it.

Q. What level is that?

A. That is called the Turnsheet level there.

Q. Is that above the Copper drift?

A. Yes, sir.

Q. And the line of demarkation between the fissure and bedded vein on the lead stope would be there?

A. Yes, sir.

Q. What is the number of that?

A. 210.

Q. When you get below on the Turnsheet level it would be 415, is that what you say?

A. Yes, sir.

Q. Then I will ask you whether as you descend from the lead stope the ore vein widens in the fissure?

A. Yes, sir.

Q. That is the fact, is it?

A. Yes, sir.

Q. How do you determine the line of demarkation between the ore in the fissure and the ore in the bedded vein?

A. I don't think I can do that. I did not attempt that at all. I don't think I can do that.

Q. Can you tell from appearances the line of demarkation between the ore in the bedded vein and the ore in the fissure?

A. I cannot do it on this map.

Q. I did not ask you to do it upon the map. Pay attention to my question. I say, what are the evidences of a line of demarkation between the ore in the bedded vein and the ore in the fissure?

A. Well, the ore in the fissure stands almost vertical—it stands vertical, and in the bedded vein it goes out about thirty or thirty-five degrees, shewing it is making out into the fissure vein.

Q. How does the ore in the bedded vein extend with reference to the strike of the fissure?

A. At right angles.

Q. Does it extend at right angles to the strike of the fissure?

A. Yes, sir, about.

289 Q. And then the structure would be across the fissure?

A. Yes, sir. It stands in this way with the fissure.

Q. If it is with the fissure, it is not at right angles?

A. This would be the angle of the vein, and the fissure is like this (indicating)?

Q. It extends with the fissure, does it not?

A. Yes, sir, it extends with the fissure.

Q. Mr. Hazelgrove, I wish you would pay attention to my questions. I ask again, how does the structure of the ore in the fissure vein extend with reference to the strike of the fissure, can you say?

A. I will not answer that question.

Q. Don't you understand the question?

A. I don't understand the question.

Q. You don't understand the question?

A. No.

Q. I will not tax you any further upon that question. I will ask you to say whether you examined the Kempton vein from the surface in the Kempton ground down to the lowest workings?

A. Yes, sir.

Q. How did you go and what was the result of your examination?

A. I walked along the stripping on the surface.

Q. What did you do in the way of going down these openings, if you did go down?

A. I don't remember about those.

Q. You didn't go from the surface of the Kempton ground down there?

A. I think I did, but I can't remember what I went through.

Cross-examination.

By Mr. DICKSON:

Q. Aren't you mistaken when you say that this raise comes up into the lime? Is the top of that raise in the quartzite?

A. I could not say.

Q. At the top is it in quartzite?
A. I would not be positive about that.

Redirect examination.

By Mr. HILES:

Q. What do you say it is in?
A. I say I would not be positive.
Q. You don't know?
A. No.

HEBER MCNEILL, a witness produced by the defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. What is your name?
A. Heber McNeill.
Q. What is your age?
A. Forty.
Q. Where do you live?
A. American Fork, Utah.
290 Q. How long have you lived in Utah?
A. Born and raised here.
Q. Lived here all your life.
A. Yes, sir.
Q. What is your business?
A. My business for the last eighteen years has been in mining, working around mines; working on the surface and underground, principally underground.
Q. You have worked in the capacity of a miner?
A. Yes, sir.
Q. Do you know the Kempton mine?
A. Yes, sir.
Q. And the Ashland mine?
A. Yes, sir.
Q. How long have you known the Kempton?
A. I have known the Kempton since 1884—November, 1884.
Q. When, if at all, did you first work there?
A. It was in November, the latter part of November, 1884.
Q. Seventeen years ago, or eighteen?
A. Eighteen years; it will be eighteen years next month.
Q. Eighteen years ago. Now how much have you worked in the Kempton mine since that time?
A. Well, I worked from that time on for about four years and a half off and on, pretty near all the time for four years and a half, and then I didn't do any more underground work there until July, 1898, and I have been there ever since except a month and a half.
Q. You are familiar with all the underground workings then of the mine?
A. Yes, sir.

Q. Now going back to the year 1884, I will ask you if at that time you did any mining upon the surface of the Kempton?

A. Yes, sir.

Q. What on?

A. We mined between the Kempton incline and the old Neptune incline on the surface.

Q. What did you mine at?

A. We mined ore there. The poorest of it we put on the dump for jigging purposes, and the balance was shipped as first class ore.

Q. Now how much did you mine there—how long?

A. We mined there from along in June until the snow drove us out in the fall on the surface.

Q. What was the extent of the outcrop of the ore there when you commenced to mine there?

A. At the Kempton incline it was about five feet, and as we went towards the Kempton going west it widened out to 25 feet, if not more.

Q. The outcrop of the ore upon the surface?

A. Yes, sir, the outcrop of the ore on the surface at places where the company had worked it. The pillars were left of ore that
291 they hadn't taken out and some places where we worked them out.

Q. Some people had worked it there before you did?

A. Some one told me it was the company, as I understood.

Q. I will ask you to look at this map and see where you were mining in 1884 with reference to the excavation there which is called "Old excavation" on the Kempton vein?

A. Here is where we started in, somewheres right along in here, and we mined out this way towards the Neptune incline. Along in through here there is about five feet, to the best of my recollection, but as we came this way it went up in the hill further, and it was worked a little down—down here to about this incline. When it got down to the west below the Neptune incline, below where the dump is now—we got down below that, probably it would be on this side, that is, looking south from the face of the hill—it is pretty large there, and along in here the company had left pillars of ore; instead of timbering it they — pillars here, along in here, and we worked them out, and we shovelled up and wheeled out the ore on the dump. We didn't sink down very deep, probably four or five feet under the surface, and we found a vein there.

Q. You found ore there—merchantable ore?

A. Yes, sir, good carbonate ore. The last shipment we got was about one hundred and fifty tons, which was sold on the George Watkins contract. It was taken between this point and that, right on the surface, and wheeled from there right out on the dump almost.

Q. Now, Mr. McNeill, I wish you would, if you can, indicate upon the map, if it be a fact, the extent in length of the outcrop of the fissure in Kempton ground so far as you know?

A. The fissure in Kempton ground?

Q. The ore—the ore vein?

A. The bed vein?

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Q. The bed vein, yes?

A. Well, I came from here right out to a point about here.

Q. When you say "here" designate it by some mark.

A. Well, it is this point here. What do you call that place?

Q. 1342 is the mark there?

A. Well, it is about fifteen or twenty feet west of this Gem post marked "No. 1." That is where I think we found that the bed vein stopped.

Q. How does it stop—what against?

A. It goes up against what we miners call limestone or country rock at this point here, about fifteen or twenty feet west or probably a little more from post No. 1 of the Gem.

Q. I will ask you if there is any fissure in the rock across there?

292 A. Well, it looks something similar to a fissure. It looks like a man had a handful of mud and throwed it up again the face of it; it is kind of spattered. You can't tell; it is something similar to the fissure.

Q. But you say it terminates against the country rock there?

A. Yes sir, at that point.

Q. About fifteen or twenty feet from——

A. Fifteen or twenty feet, maybe a little more, from post No. 1 west of the Mountain Gem.

Q. Now you know the lower Ashland tunnel?

A. Yes, sir.

Q. Do you know the Ashland fissure?

A. Yes, sir.

Q. I wish you would, commencing at the portal of the lower tunnel, go through the Ashland, the lower Ashland tunnel, down to the lowest workings and tell us what is there in the way of a fissure and in the way of ore?

A. This is the lower Ashland tunnel here. It runs in quartzite from here to Station 702 and comes out this way in quartzite on this side and lime rock on the other side. It runs through here. There is a crosscut in there running off to the right a little ways, and continues on until we get to what we call a frog of ore.

Q. Continuing on in the fissure?

A. Yes, sir.

Q. And in ore?

A. In ore all the way along, nearly through up to the face here. This is a crosscut that is in ore, running out about eighteen feet. We came back to a point here, we dropped down about twenty some odd feet into that is the Turnsheet level; that is in ore all the way down. About here there is another crosscut running east; that is in ore; then you would turn north about twenty feet, and that is in ore, and coming back here to the south that is in ore. We go to this point 418 and take the same level, and go west along here to this point at 420 where we find a wall of lime rock or country rock on the right-hand side, and between 18 or along about 19 there is a winze that comes down what is called the west drift; that is it there. This winze is in ore all the way down; clear out to here it is lime rock, and we

strike some more lime rock there again; follow the ore clear out to this point, about here is where we struck it coming this way. The ore runs right along by the side here to this point 511 and 512. 511 is where we first struck the ore.

Q. Where you first struck the ore when you were going in?

A. Going in from the Neptune tunnel; that is, the west drift in the Neptune tunnel. That is where we struck the first ore.

Q. Going the other way what do you strike?

293 A. We struck lime going out this way—the country rock clear out around here.

Q. That is, clear out to the Neptune tunnel?

A. That is out to the main Neptune tunnel.

Q. I see an apex there projected on the map; what is that in?

A. This upraise?

Q. The other one?

A. This one here? It starts in lime rock, but the top is in quartzite.

Q. It ends in quartzite?

A. Yes, sir.

Q. Did you assist in running that?

A. Yes, sir.

Q. Who drove that drift?

A. Mr. Sampson drove the drift from here around to about to fifteen feet in this part of it, and he stopped, and Colonel Wall continued it from there around to here.

Q. Who did the mining work—the actual work?

A. I helped to do some of it.

Q. You worked in the drift yourself?

A. Yes, sir.

Q. Running it from a point near 512, the crosscut?

A. Yes, sir.

Q. Down to 519?

A. To 512.

Q. And then west?

A. And then west.

Q. Under the drift?

A. Under the drift—yes, sir.

Q. Who made the crosscut?

A. I helped in doing this cross-cut work here, and I helped to run that raise.

Q. You helped to run that raise up to the Turnsheet level?

A. Up to the Turnsheet level.

Q. Let me ask you, is there any means by which you can connect or have connected the fissure in the lower Ashland tunnel with the surface?

A. Yes, sir.

Q. How?

A. You go in at this point here, 712—between 712 and 711 there is a raise. We raised up here and connected with what is called the Ashland tunnel, and we came back here some few feet, I don't remember just what, and we made another raise up and connected with the Wheelbarrow drift, what is called the Wheelbarrow drift.

From the Wheelbarrow drift we raised up to a point within about eighteen feet of the surface on the vein to these workings, and I found it was kind of dangerous, and I then went on to the top and drove from up there down, and then we made a hole through from the top to where we raised up and put a ladder down through it.

Q. Take a pencil and mark that where it comes out to the surface?

A. Well, it comes out somewhere about here.

Q. How have you marked it?

294 A. Well, my best recollection is about there.

Q. You made a hole there to the surface?

A. Yes, sir.

Q. Did you find the apex at the top of the fissure there?

A. Yes, sir.

Q. You connected it in that way with the fissure as it is called in the lower Ashland tunnel?

A. Yes, sir, and while we were getting ready to put our ladders in and get the timbers in some of the ground caved in, and I went from the top down to where I had been below, and then I came up from below as far as I could, eighteen or twenty feet, but it looked very dangerous there. This made the connection with the hole below, and we put down a ladder, and then we went down below and looked up it, and I came to the top to see the foreman about putting in some timbers, and he told me to go ahead. I framed the timbers, and while I was framing them the whole thing started to cave in and the whole works caved in, and we consequently did not get it timbered up.

Q. You went through the hole before it caved?

A. Yes, sir, I went through before it caved.

Q. You say it was on the fissure?

A. It was on the fissure.

Q. Now going back to the upper Ashland tunnel, there appears to be at point 605 what is described as the west drift. What do you know about that?

A. I helped to run that.

Q. When was that run?

A. I think we started that in December a year ago.

Q. Last December?

A. Last December.

Q. What did you find?

A. We found the bed vein all the way through, carrying ore.

Q. The bed vein all the way through?

A. Yes, sir.

Q. Towards the end of the drift, how does it appear?

A. There is still some ore there, probably six inches, but not so much as here.

Q. You say it begins to fade out as it goes west—the ore?

A. Yes, sir.

Q. Now I wish, Mr. McNeill, you would describe what you know about the continuity of the vein from the top, where you say you mined the cropping in 1884, down to the lower workings, and their connection with the lower workings in the Ashland fissure, if you know it?

By Mr. DICKSON: As to the continuity of the ore, speaking of the bed vein or the fissure vein as testified to by the other witnesses, we do not dispute, we do not question.

By Mr. HILES: Do you make any question about the ore in the fissure being stratified differently from the ore in the bedded vein?

295 By Mr. DICKSON: Yes, sir.

Q. Now, Mr. McNeill, have you ever observed whether there is any difference between the stratification of the ore deposit in the fissure, in the Ashland fissure vein, and the stratification in what is called the bedded vein?

A. Yes, sir.

Q. What observations have you made?

A. In the fissure vein she pitches northwest—lies with the fissure—pitches northwest.

Q. What does?

A. The ore.

Q. The ore?

A. The ore lays the same in the vein as it does in the bed vein, and it pitches to the north.

Q. Parallel to the bedded planes?

A. Yes, sir.

Q. How is that visible? How is it made perceptible? By what means do you determine that? Can you see it?

A. I don't understand your question.

Q. Well, you say that the ore in the fissure lies lengthwise with the fissure?

A. Yes, sir.

Q. Now then, when you come to the bedded vein, how does that lie? Is it stratified with the bed?

A. Yes, sir.

Q. Can you see it?

A. Yes, sir.

Q. You have seen it, have you?

A. Yes, sir.

Q. At what point?

A. I have seen it on the Turnsheet level.

Q. On what you call the Copper drift?

A. I saw the bedded vein there very plain.

Q. On the Turnsheet level?

A. Or above it in the Copper drift, what you call the Copper drift. I see it.

Q. Here is the Copper drift as it is marked?

A. Yes, sir, 207 to 200.

Q. 207 in the Copper drift?

A. This is 208 in here, and that is 209. I say, the bedded vein shows very plainly running along there to a point about here.

Q. What is that point?

A. Well, that would be 205.

Q. And then do you commence to go into the fissure?

A. The fissure stratification is about there at that point.

Q. Describe the difference between the stratification of the fissure and the bedded stratification of the vein?

A. The fissure stratification lies with the fissure; the ore pitches with the fissure, and the stratification of that vein pitches more flatter and off north, lays east and west—it lays more flatter.

By Mr. DICKSON: I have no cross-examination.

ENOS A. WALL, a witness produced by defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Mr. Wall you are one of the defendants in this action?
A. I am.
Q. You are the lessee who is mentioned in the pleadings?
A. Yes.
Q. Of the Kempton and Ashland mines?
A. I am.
Q. What is your business?
A. Miner.
Q. How long have you been in that business?
A. About 30 years.
Q. About 30 years?
A. Yes; may be more.
Q. In what places?
A. In this State and Idaho, in vein mining however, only in this State and Idaho.
Q. You are acquainted with the West Mountain Mining District?
A. I am.
Q. And you know the ground which is in controversy here?
A. Yes, very well.
Q. Now, I wish to ask you—how long have you been in Bingham?
A. Oh, I have been operating there to some extent for ten or twelve years.
Q. You are well acquainted with the ground there?
A. Very well.
Q. You know the nature of the rocks in that neighborhood?
A. I do.
Q. And their strike and their dip?
A. I do.
Q. And the difference between the various strata of rock?
A. I think so.
Q. Composing the crust of the earth?
A. Yes.
Q. Now I wish you would describe the difference, if there be a difference—in the ore vein as it is exposed in the Kempton and the Ashland mine, the difference in the ore, in the stratification, in the fissures and in the bedded vein?
A. The difference is largely, chiefly, I will, say, structural. There is some difference however, in the metals contained; that is the ores of the Ashland carry a little higher percentage of lead—as well as a

higher, not the lead but a higher percentage of gold and silver, otherwise the general character of the ore is the same, all composed of the same metals. The shipments show, from shipments made from the Ashland fissure before I took hold of the lease, the shipments made of the ore, showed 20 or 30 per cent higher—three or four ounces higher in silver and a good deal more gold, than the shipments I
297 made from the Kempton ore. Otherwise in appearance they are the same. There is a structural difference. I mean by structural difference, the manner in which the ore is crystallized and deposited.

Q. How do they differ in the fissure and in the bedded vein and how do you determine it. How is it visible if it is visible?

A. The platings are, the structural lines of the ores and those related to them in the bedded vein have a similar appearance to that of the fissure where the bodies are large and wide, more so than where they are narrow, as they are in some instances. At a considerable distance from the fissure, then the structural lines are very distinct and parallel to the bedding of the limestone. In some instances the bedding planes are preserved through this ore body, that is, the bedding planes of the limestone, the structure of the limestone, aside from being altered, and replaced with mineral, such as we find there, the bedding planes are preserved in some instances. That is especially noticeable in one of the east drifts in the lower level from the Kempton tunnel; generally the lines which run parallel more or less with the ore are understood to be structural lines, or called structural lines, or at least I refer to them as structural which divide or make up the mass of the vein matter where not affected by the fissure; whereas the ore in the fissure or the ores related to the fissure have structural lines parallel both in the dip and strike to that of the fissure.

Q. I will ask you to state Colonel Wall whether as you proceed northerly underground in the Ashland fissure, whether it widens, that is the ore vein at any point in the underground workings of the mine?

A. Yes, sir.

Q. At what point does the ore body commence to widen?

A. I will refer to the map, although I have not studied the map closely as to the stations marked.

Q. Give it approximately?

A. At and near 713, a little further than that, but approaching station 713, the vein which existed to a point here near this point 713, has been entirely, or nearly so, excavated, or at least the valuable portions have been extracted and only thin streaks remain on the walls. About that point the walls gradually,—and for some distance further back, gradually diverge so that the drift being continued upon what was the central structural line of the fissure lost sight of both walls, so that the ores take the place of the walls on either side, and so continue to the end of the drift; that is, the ore body becomes wider than the tunnel and both walls are lost to view. What were walls of the fissure to that point are lost on the two sides of the tunnel. The tunnel however, following the same structure

planes within the fissure that it had followed all the way through.
Up to that point, 5, 6 or 7 feet would be probably the greatest
298 width and down to four and a half or five and perhaps smaller than that. But the ores were practically all mined up to the two walls at that point, Station 713.

Q. Have you ever observed what is the width of the ore body in the Ashland fissure on these lower workings?

A. I have.

Q. What is it?

A. The tunnel, as has been explained, intersects what is called the Lead stope above the Copper drift through a small opening and which has an excavation across the lines of the course of the tunnel and of the strike of the Ashland fissure. At the end or near the end of the tunnel, a cross cut has been driven to the left westerly about 18 feet, and seems to reach the termination of the ore at the wall of the vein at that point. In the other direction for a distance of about 40 or 50 feet, and I think altogether about something like 60 feet, is the line of division or at least the line distinct of the structure of the fissure. There is ore along the side of one of the north drifts in what is called the Lead stope at or near to station 210 as marked there. The distance is about 60 feet across the ore body there where the structure is solely that of the fissure upon that level. On the level below, the Turn Sheet, it is considerably wider. I think I made a note of that. My reason for not wishing to study the maps more is because of the failure of my eyesight. At 416, if there be such a point, is the point located by the surveyor I think in my presence, as the easterly limit of what is distinctly—(the fissure).

Mr. DICKSON: Is not that 415?

A. It is 416.

Q. At the point where the Turn sheet level goes straight to the west?

A. It is 416; beyond that there are some suggestions of a fissure structure for some little distance, but up to this point the——

Q. The fissure structure is pronounced?

A. The fissure structure is pronounced and distinct. On the lower level at a point 15 feet easterly from station 513, wherever that may be, and which would be about on this line—that would be the easterly line of the Northern Light claim as marked at this point where it crosses the level---15 feet easterly from that point. There has been no point established by the surveyor so that I cannot show the exact point.

Q. From that point west on the drift it is in the Ashland fissure vein?

A. Entirely in the Ashland vein.

Q. And east of that you call the ore the bedded vein?

299 A. To the east of that there are still planes parallel to the fissure suggesting a fissure influence still present. However at the intersection of the drift, at this point here where the drift goes off the structure of the ore is distinctly with the bed.

Q. Visible to a miner, an ordinary miner; would his attention be called to it, the difference in the structure?

A. I could not say as that.

Objection.

WITNESS: These facts are disclosed to a miner in his breaking the ground, that is, in extending these drifts that one on the Turn Sheet level and all the drifts running in that direction, westerly the ores are found to cleave in the direction of the fissure, both as to strike and dip, and also to vary in character especially when we were within a few feet of the fissure; there would be a band where the ore was lean and thin and another where it was rich. So that in driving ahead on what we supposed at the time was a drift upon the strike of the bedded vein, we found at places the limestone on one side showing a normal strike of the beds. But found our ore body with the structure in the opposite direction, and it was some little time before its significance was discovered. That was previous to any developments in the Ashland vein, excepting what had been carried on and been made by the leasers preceding me. That is the question which arose and which led to the purchase of the Ashland lease, having in view the possibility of the ore body connecting with the fissure. We found afterwards that that was true.

Cross-examination.

By Mr DICKSON:

Q. The north and south fissures, Colonel Wall, are persistent, are they, in your opinion in that country?

A. They are.

Q. Cutting the alternating beds of quartzite and lime, and cutting the porphyry wherever it is in their way?

A. Many of them do; some may not.

Q. I am speaking of these principal ones. The Ashland does?

A. Yes, sir; it does.

Q. It cuts the quartzite and the lime, the quartzite, lime and porphyry and everything else?

A. Yes, sir.

Q. And it is an ore bearing fissure?

A. Ore bearing, yes, sir.

Q. And the Sampson fissure, also cuts the country generally?

A. The same.

Q. And the quartzite and the lime as far as possible to
300 discover?

A. Well, there was no developments on either the north or south to determine and no exposures at the surface to determine whether the Sampson fissure cuts through them above or below, or not. But I have no doubt that it does.

Q. You have no doubt at all but what it goes right through the country generally just as the Ashland fissure does?

A. I think so.

Q. And it is an ore bearing fissure?

A. Oh, yes, it has been very productive; while I have done no mining in it, it has been very productive.

Q. There is no doubt about it being ore bearing?

A. None at all.

Q. The Kempton fissure is about parallel to that?

A. The Kempton fissures are all about parallel in strike but the dip is quite different; The Ashland——

Q. I am speaking of the strike?

A. I am going further? The Ashland dips at a much less degree of inclination, say about 70 degrees, whereas the other two are almost vertical. So that they are getting further apart as they go further below.

Q. We will confine ourselves now to the strike. The strike of the fissure found in the Kempton is about parallel?

A. Yes.

Q. With the other two?

A. Yes, sir; apparently.

Q. And in your opinion is that also a persistent fissure which cuts through the country?

A. Apparently; yes, sir.

Q. And is an ore bearing fissure?

A. Very slightly mineralized so far as I have examined it. I never examined it however through the incline.

Q. Now, coming back to the Sampson fissure for a moment as you travel southerly from where you had it at the surface near a point marked shaft on Exhibit 21, as you go southerly from that, and in the direction of the strike of that fissure you come to the quartzite and pass through the quartzite, and saw the two rocks exposed so that you could see evidences of the fissure going on through there?

A. The quartzite is exposed and does show at least two points, evidences of slight fracture, and the continuation of some of these fissures. That is over here, there are two points I noticed, several hundred feet away, where there are some evidences of it.

Q. Now as you come northerly upon the surface above where the east drift crosses the east side line of the Ashland claim on this map, as you go northerly on the surface from there the rock is exposed, is it not?

A. Yes, sir; that is it is exposed, the quartzite is exposed across the line of all the fissures. The outcropping of quartzite.

Q. But you find the fissure at intervals as you go over the
301 surface?

A. I have not been able to discover it at all but I have never examined carefully for it. There are some joints and cracks in the rock which might or might not cross in that direction.

Q. Well you have no doubt it goes on beyond though you have not been able to find it?

A. Oh, I have no doubt there is a fissure goes through.

Q. Although you have not been able to sufficiently examine it to find it?

A. I have not had occasion to examine it; it was of no concern. I have examined the rocks composing the cliffs at the top of the hill but at this point if there were any cracks or joints of the fissure it

would be noticeable but I have no doubt that it does pass through there.

Q. The ore that you found in what you call the bed or bedded vein had its origin from these fissures, in your judgment?

A. I think so.

Q. It was deposited at the same time the ore was deposited in the fissure vein; the solutions coming up through these several fissures and deposited the ore in the fissures and it fed out into the limestone in many places?

A. I have no doubt that the entire deposition of ore, whether it extends out and takes the form of a bed or that of a fissure, I have no doubt that the deposition was contemporaneous.

Q. From the fissures?

A. Came through the fissures, the solution did. I think that but for the fissures there would have been no mineralization whatever; but something further was necessary in the cases of the large ore deposits in the beds, and that is another fissure which has been produced by the intrusion of thin sheets of porphyry along the beds; we find through a large ore body a sheet of porphyry varying in thickness from a foot or two at points to several feet in thickness. This sheet extends through and is inclosed within the ore body and within perhaps ten feet of the upper wall as would be suggested by an incline connection with the lower West drift in the Turnsheet level, a sheet of porphyry is followed in the West drift all the way out up to that incline through the Turn sheet level east and west having a dip conformable entirely to the dip and strike of the bedding of the lime. However, the material on one side is ore, I don't know how thick it is on the other side. It is developed ten or fifteen feet, which to my mind suggests the intrusion of this sheet of porphyry before any mineralization between the beddings of the limestone, which again is crossed and intersected by the fissure, the Ashland fissure and the other fissure, the mineralization is of a character which replaced the limestone on both sides of the porphyry dike, preserved the porphyry dike in its position as occupied between the limestone beds as
302 original deposited. This intrusion produced a channel across and connecting with the fissure, which I think was necessary in order to produce or introduce the necessary circulation of the solutions which we assume were the cause of the ore deposit. That circulation was through the fissure and the contract between the porphyry sheets and the limestone on both sides, and we now find the dike inclosed in ore on both sides. The ores near the center line of the fissure bears the structure of the fissure some distance away from it. Whatever the effect of the fissure through the rock it must have some further intersecting channels in order to produce the circulation necessary to form these deposits; at least these channels are found through the entire deposits.

Q. Now, I care nothing about that matter at all. Do I understand that you think but for the fissures there would have been no mineralization here?

A. I think so.

Q. There would not have been?

A. I think so; I think none whatever.

Q. Now the porphyry you spoke of in the West drift; do you mean what is marked in the West drift between 517 and 512?

A. All the way through the West drift.

Q. That is the West drift you mean, is it?

A. I mean the West—yes.

Q. That is the West drift you mean: There are two West drifts on this map?

A. I mean the West drift from the Kempton tunnel which is in the ore body.

Q. What is the position of that porphyry as to being vertical or what?

A. The position both of the strike and dip conforms absolutely to the dip and strike of the limestone strata where the strata has not been disturbed and of all the strata as exposed on the hill, you can see it wherever exposed.

Q. You found porphyry in the Turn Sheet level?

A. All the way to the face of it or nearly to the face.

Q. Throughout the whole length of it?

A. I believe near the face there is a short fault; near the face; the drift has passed to the south of the porphyry dike.

Q. My question is whether or not, speaking in a general way; I did not mean every foot of the way, you found the porphyry in the Turn Sheet level from its westerly to its easterly extremity?

A. Well, not entirely Easterly to a point—I would not be certain of it——

Q. Well, about; approximate it?

A. 25 or 30 feet further east than the point which has been designated as the limit of the fissure structure;

Q. That would be within 25 or 30 feet of station 416?

A. Yes, sir.

303 Q. From there on in the Turnsheet level you do not find the porphyry as you go east?

A. Considerably further—what station is this?

Q. 412?

A. At least as far as 412.

Q. From thence easterly you did not find the porphyry in the Turn sheet level?

A. I do not undertake to fix the point but so far as the level is within the ore vein, so far as there is any exposure of ore, the eastern limits of which I am not certain, because it does not quite connect there with the upraises from the top; but so far as the ore exposures continue the porphyry continues; and whilst this runs perfectly true the level meanders, and there are possibly some portions of the level that does not expose the porphyry.

Q. You do not mean to be understood as saying from the easterly limit of the Turnsheet level where you have ore there and along here where you have ore at station 407 in that same level, you do not mean to say there is any porphyry there?

A. None whatever; none on the eastern side across the fissure.

Q. As far as it goes?
A. None on the Turnsheet no.
Q. Have you any judgment, Colonel as to whether the porphyry was there before the north and south fissures through the country?
A. It was there before, yes, sir.
Q. Before?
A. And this is proved by the fact there has been a slight displacement.
Q. Porphyry on which side?
A. Which has dislocated the porphyry but very slight however; the westerly side being thrown down to the south very slightly. I would say.
Q. How long since this work on the West drift from 517 to 512 was constructed—you did that; that was under your direction?
A. I did that all since October last; I do not remember the date now.
Q. And prior to July last you were familiar with it; July of this year you were familiar with it?
A. During the time it was constructed, all of it.
Q. Prior to July of the present year had you been through any of the ore bodies lying in the Sampson fissure?
A. Only where the workings of Mr. Sampson were suspended, where they ceased below the level.
Q. Where? Below the level of the tunnel?
A. Below the level of the tunnel and at a point outlined here at that stope.
Q. But you have been in there?
A. Yes, sir.
Q. And saw the ore in the fissure prior to July of this year?
A. Yes, sir.
304 Q. And observed its structure?
A. I cannot say that I observed it. I observed its form. That was my first visit and only visit to that portion of the mine, which was a very superficial examination of that portion of it.
Q. When was the Turnsheet level extended west to the station 426? How long ago?
A. That was all done under my supervision.
Q. Prior to July of this year?
A. From the point called the McCarty drift or McCarty incline.
Q. Near station 414?
A. Near that and from that westerly.
Q. From thence westerly to station 420 was driven under your supervision?
A. Yes, sir.
Q. And prior to July of the present year?
A. Yes, sir.
Q. Had you been prior to July of the present year through that portion of the Turnsheet level that crosses the course of the Sampson fissure?
A. Yes, sir.
Q. And observed the ore there as it crosses that fissure?

A. Yes; I observed it, but merely with a view of determining the commercial value of the ore, or rather its possibilities, to find out whether it could be worked profitably.

Q. And you were familiar with that work?

A. Not since this controversy, not very familiar with it.

Q. You have been through the upper Kempton tunnel, I take it prior to July of this year?

A. Yes.

Q. And been through the Copper level so far as it is extended?

A. Yes, sir.

Q. Prior to July and through the Turnsheet level?

A. Yes, sir.

Q. And through the east drift work on the tunnel level?

A. The East drift.

Q. So far as it was accessible?

A. I have been to the end of it. It was then accessible to the end but it has caved in since.

Q. So that you went through that; you went through the ore body on what you call the Sampson fissure?

A. This would be the entrance or rather this level is above the stope indicated there and the level is upon a vein having the bedded structure.

Q. And this is what you had reference to when you spoke of the ore beds in what was formerly beds of limestone were preserved on that line?

A. Also the thin sheet of porphyry under that.

Q. The ore is what is called or marked the upper stope comes right up to the level at the point where I hold my finger
305 near—no station is marked there but ought to be—where the level apparently as you go east intersects the stope?

A. Yes; comes up to the level there.

Q. Comes up to the level there?

A. And then extends across the level.

Q. Further west?

A. Yes, sir.

Q. Now were you at the Upper Ashland tunnel prior to July of the present year?

A. Yes, sir.

Q. That is run on the fissure?

A. That is run on the fissure; that is, it intersects the fissure at some little distance in.

Q. Now had you been in the Ashland No. 2 for any distance prior to July of this year?

A. Yes; to the fissure.

Q. To the fissure?

A. Yes.

Q. It has been driven since July some distance?

A. Yes; considerable.

Q. Where was it driven; from what to what stations? Where I hold my pointer?

A. From somewhere near that bend.

Q. This point?
A. Yes, sir.
Q. That would be station 713. Driven from there out to the present face and then this little cross cut has been driven to the west since July of this year?
A. That is true—I don't know—since July?
Q. Since July?
A. I am not certain as to the date when the work was commenced upon that, but certainly recently.
Q. And from the time, whatever it was, the time that work was commenced there, there was no interruption?
A. Until interrupted by proceedings in Court.
Q. Now Mr. Wall how long have you been directing the work in this mine?
A. From some time in October, I think.
Q. Of last year: about a year?
A. Yes; I am not sure as to the date.
Q. Now on the 26th of July last, being familiar then with the entire West drift on the tunnel level, having been clear through from end to end of the Turnsheet level and the copper level and the Ashland tunnel, the one colored in blue, the Ashland No. 2 tunnel to station 713, you were notwithstanding that of opinion on the 26th of July that there was but one vein in that ground and that it was a bed vein weren't you, and so verified an answer in this case?
A. I was of the opinion and had demonstrated that there was one continuous ore bed from the surface down, and if the verified answer is not in accordance with that, if it gives the construction that this ore bed was continuous and one bed through all the
306 workings and was not susceptible of division as to its origin, then I misapprehended the answer.
Q. This is your signature?
A. Yes, sir.
Q. Dated July 26th?
A. Yes, sir.
Q. I want to read to the witness from the answer. Let me read from page 10. "But on the contrary thereof" that is contrary to the fact that these ore beds——

The COURT: Let us have the whole statement.

Q. I will read the entire 12th paragraph, as follows: "And these defendants further answering said amended bill of complaint deny that if there is any mineral vein or lode in the said Kempton mining claim, dipping or extending to or under the Jordan Extension mining claim, the Northern Light mining claim, the Grizzly mining claim and the Fairview mining claim, that such lode or vein does not have an apex in the Kempton mining claim or belonging thereto, or in any wise forming a part thereof and these defendants deny further that the same is a part of or belongs to the alleged Old Jordan or Mountain Gem lodes, or either of them, the property of said complainant, or that the said alleged lodes or any lode or lodes in their dip or otherwise between protractions in their own alleged

direction of the alleged parallel surface lines of said alleged claim, or otherwise, or at all, pass across or beneath their alleged side lines or extend beneath the surface or across the Kempton Mining claim, or enter into or beneath the surface of the Jordan Extension mining claim, or Northern Light mining claim, or Grizzly mining claim, or Fairview mining claim, or either of them, or that the ores found beneath the surface of the last named claim in said alleged lodes are the same, these defendants wrongfully or otherwise pretend are in or belong to any lode or lodes in the Kempton mining claim, but to the contrary thereof, these defendants aver that every known vein or lode of metalliferous bearing ores, earth or rock in place existing in the said Jordan Extension mining claim, the Northern Light mining claim, the Grizzly mining claim and the Fairview mining claim including the lode and vein mentioned in complainant's amended bill of complaint, and including the said unpatented lode, has its top or apex within the surface lines of the said Kempton patented ground, and as a part of the same on their dip beyond the northerly vertical side line of said Kempton claim, and the same and every part thereof in its dip lies between vertical planes drawn downward between the end lines of the said Kempton claim protracted and so continued in their own direction, that such planes intersect the exterior parts of such veins or lodes in their dip past the northerly vertical side line of the said Kempton claim underneath the
307 surface of said alleged Jordan Extension claim, the Northern Light claim the Grizzly claim, and the Fairview claim, and constitute a part of the Kempton lode mining claim and the veins and lodes patented to the grantors and predecessors "in interest of defendants by the said patent of February 23rd, 1875." Were you not when you verified that answer, of opinion that there was but one vein of ore and that it was the Kempton vein?

A. I am of the opinion now that the answer is absolutely in detail and as to every inference absolutely true That the question of the structural relation of the ore bed is purely technical; that there may be legal questions as to who would own, if there were two intersecting veins, the point of intersection. Those are not for me to determine. But that ore body was connected from the surface as stated in the answer down all the way through. The vein had no interruption from one end to the other and is a part of the same ore body, is a part of one solid ore body from the bottom to the top and the apex is as stated there.

Q. The question that I want an answer to is whether or not at the time you verified that answer you were of the opinion that there was but one vein disclosed in all of these workings and that all the ore underlying the Fairview, the Grizzly, the Northern Light and the Jordan Extension is in one and the same vein, viz: the Kempton vein. Was that your opinion when you swore to that answer?

A. The references are to the ore bed in dispute only; what other ore bodies may be under these claims I have made no allusion to. However, I am frank to say this, that the extent of the fissure influence has become evident within the time mentioned largely because the Ashland tunnel had not reached a point beyond which

both walls were visible. In all our work in running towards the Ashland fissure we expected some narrow fissure would be found at about this point and which would go through the ore body and when we come into this condition near to the fissure we thought it as an unusual structure, an unusual condition, but it could not be explained by anything present. Perhaps I might have thought there was joint planes or fractures or sheer planes, or any other conclusion might have been reached, but there was absolutely no knowledge as to the Ashland fissure until it was driven into and connected with the ore body, and which has been done chiefly since the answer was filed. That has been driven in carrying with it the structure of this fissure everywhere in the ore bodies, that is certain bands or lines parallel to the walls in the center of it.

By COURT:

Q. You are speaking of the place where the vein appeared?

308 A. And also in the same way down in the quartzite. It had not been driven beyond that point. As the drift was carried ahead it was kept upon the same central lines, structural lines, the center lines followed all the way through, and to my astonishment when we reached the end of the connection with our drifts and made the cross cut we found this vein structure extending out the distances I have named, which made clear the meaning of the structural lines discovered while driving ahead on the presumption that this was all a bed vein. I do not care to be credited with the presumption or to be excused from the answer, the import of it, upon the presumption mentioned because the ore body is one ore body from the surface to the bottom.

Q. What I want to get at is your opinion——

A. And probably belongs to the Kempton mine.

Q. At the time when you filed that answer, did you think or have any suspicion that there was more than one vein disclosed?

A. I had a slight suspicion but I did not publish that suspicion because my lease upon the Ashland premises was very short and it was necessary to have that extended which I did later on.

Q. When you filed your verified amended answer a few days ago didn't you there state it was only in the past few weeks that you discovered there was a fissure vein there?

A. Yes, sir. After the extension of the tunnel upon the vein and its intersection with the ore body that had been developed, then it became evident that a portion of this ore body was due in its origin at least to the Ashland fissure, and who is the owner of that is what we wish to have determined by this amended answer.

Q. The ore in what you call the bedded vein, as I understand the testimony thus far, has a rake or pitch somewhat northwesterly?

A. I think that is rather more apparent than real, owing to the difference in the dip of the Ashland from that or the Sampson or Kempton at and near the surface they are very close together. The ore body is very large at the surface and as the work was carried down the dip of the Ashland fissure being less, the ore body was carried further away from what would be the true dip of the bedding planes

but the large ore body at the surface was still within the range of the Ashland fissure. So that as the fissure dipped away the larger portion of the ore body was carried with it, that is the works are carried into that part of the Ashland fissure which dips to the west and gave the appearance that the ore dipped or raked in that direction.

309 Q. Then in your opinion much of the ore in what you call the bed vein does not have a north pitch or northwesterly dip?

A. No.

Q. You do not agree to that?

A. No, sir; it is ore all the way down; it joins the ore in the Ashland fissure to the west and also goes further beyond.

Q. What did you say was the difference in the ores in what you call the bed vein and the fissure vein?

A. There is a difference in the metal value as suggested by the shipments made from the Ashland fissure by my predecessors and from the Kempton which I have made myself.

Q. What is the difference?

A. Well, in ounces in silver?

Q. What is it?

A. It would be anywhere from twenty to forty per cent.

Q. Which is the larger, the richer in silver?

A. The Ashland ores are the richer.

Q. About what is the average silver contents of the ores from the Ashland fissure?

A. As I am advised it is about from 12 to 15 ounces of concentrated ores, that is dressed ores as against——

Q. Crude ore; how much of an average, taken from the mine?

A. Well, the proportion I suppose would be, the values would depend largely upon the percentage of lead in the ore; and they are more or less——

Q. Colonel, you can answer me more directly, can't you?

A. I don't know, there being no shipments of crude ore I don't think from the Ashland.

Q. About how many tons of crude ore are put into one ton of concentrates?

A. I think about three. The concentrates show from ten to twelve and as high as fifteen.

Q. From ten to fifteen?

A. Yes, sir.

Q. Are there not ores in the bed vein that carry silver values as high as that?

A. None that I know of, not that I am aware of.

Q. None at all?

A. Not that I am aware of; possibly so.

Q. What other difference in the metal contents is there between the ores of what you call these two veins?

A. I think the gold values are some higher.

Q. Some higher?

A. A little.

Q. What are the gold values in the fissure vein per ton?

A. I am not sure but from recollection I think it is about two

dollars. Perhaps I can find some of the returns from the smelters which will show the actual values.

Q. Can't you find ore in the bedded vein carrying values as high as that?

A. Yes; possibly.

310 Q. What other difference is there in the metal contents?

A. I don't know.

Redirect examination.

By Mr. HILES:

Q. It is a fact, is it not, since the commencement of this action and since the service on you of the writ of injunction that under an agreement you have done work in the mine there for the purpose of exploration and for the purpose of evidence and proof?

A. Very considerable, very considerable.

Q. Very considerable. Now in the sixth paragraph of the amended answer I read, "And these defendants further aver and show that the fact of the dipping of said Ashland lode underneath said Grizzly, Northern Light, Fairview and Jordan Extension was discovered by these defendants and particularly by said defendant Wall, the lessee as aforesaid of the said Ivanhoe Mining Company, by underground development work and surface work and inspection done and made since the filing of the original answer in this action." Is that the work which you refer to as having been done?

A. Partly. May I explain further?

Q. Certainly.

A. From the lower west drift which has been stated as being in the fissure from a certain point there, the drift has been driven easterly about about 50 feet, that has been extended fifty or sixty feet further, and a cross cut made to the east of about 20 feet, and in that cross cut was disclosed this plating or lamination of the ore bed parallel to the Ashland fissure, driven until a division or at least a very well defined boundary is found on the east having the dip and strike of the Ashland. Upon the line of that inner drift extended back along on the strike of this drift against the main level along one of these plates—in fact it is plated all the way through up and down, and there being no other developments to suggest any other relation to the fissure, is why this was not noticed; and besides that this work was done by some of the miners under the foreman, and once a week or ten days I would go out there and go into the mine, and sometimes not; at any rate it was not very carefully examined. This might have been driven through there for a month without ever having been examined carefully. That drift has been extended something like a hundred feet, following the same structure that the Ashland fissure has, yet not being certain, the tunnel was driven through to intersect what is called the Lead stope in which this structure had been especially noticeable, because there were bands across and parallel to what is now shown to be the line of the fissure bands with one or two or three feet thickness of very high

311 grade ore, which is rather a rare occurrence there, and this comes in with an ore of a different kind altogether, that is

lead and silicious ores. The east drift in the Turnsheet level was in about 50 or 60 feet I think and a cross cut had been run from that some 20 feet; that is extended say altogether perhaps 125 feet, and that was upon structural lines similar to the Ashland fissure. I will say that one of our miners, Mr. McNeill, who was doing work there and assisted in these, insisted they were upon the Ashland fissure from the first.

Objected to.

A. This was extended afterward so that it was altogether 100 to 125 feet and an upraise was made intersecting the Ashland tunnel, and when the connection was made it was found that this level had been all the way along upon the central structure lines of the Ashland fissure. A cross cut was made from this or had been made from this to the west about 25 feet where the same termination is found as found upon the lower level; that is for a distance in well defined boundaries and suggesting the near approach of the foot wall on the side of the fissure. That drift was extended some 20 feet so as to be certain to expose the structural character of the ore beds so as to determine its relation to the Ashland fissure; and this has been done previous to the filing of the paper that you have referred to.

Q. Done previous to the filing of the amended answer?

A. Yes, but all of it practically subsequent to——

Q. To the original answer?

A. Yes, sir; and the greater portion subsequent to the injunction.

Q. So that by means of these explorations and the inspections, you think you know more about it now than you did when the original answer was filed?

A. Certainly do, certainly do.

Q. Now, Col. Wall, you say that you have no doubt but what the Sampson fissure extends through the lime, the bands of lime and through the quartzite also?

A. I have no doubt of it.

Q. Do you mean thereby that it extends underground or that it reaches the surface?

A. I have no doubt that the fracture in the ore bed would extend on through. Now the ore beds, while it is quite strong on either side, are not nearly so strong as the Ashland fissure and for that reason, if I may be allowed to explain, I suggested there was something more necessary than the crossing fissures, which I assume in the case of the Ashland is furnished by the intrusion of this porphyry dike, which does not cross or reach the Sampson fissure and does not
312 reach the Kempton fissure which contains little or no valuable ore, but reaches the surface within the Kempton claim where the excavation which has been made, where the large ore bodies occurred; and the outcrop on the surface does not extend easterly but does extend down with the bedding planes to the east and is intersected by the Ashland fissure and affords, as I think, another channel.

Q. You think the intrusion of the porphyry was a factor in facilitating the circulation which produced the valuable ore body which lies in the Kempton bedded vein and in the connected fissure?

A. Undoubtedly, undoubtedly. With reference to the ore body at the surface, may I have one word. The outcrop on the west of the Dunstan stope, this porphyry dike comes to the surface at the big pit, to the west however, and where the ore body comes up regularly with the bed but raises to the west where the smaller strippings have been shown along here.

Q. You say that porphyry comes to the surface?

A. Comes to the surface here and is inclosed within the ore bed for some distance to the west of it; but the Dunstan raise is almost vertical and the fissure upon which this stripping was done is almost vertical, whereas the beds are dipping to the north at 30 degrees or something like that from a point about 30 feet deep. The ore body of which the apex is exposed by this stripping comes up in the nature of the fissure below that and that goes off as a bed, which I take to be the result of a fracture due to the intrusion of porphyry dike which crosses it, at least there is a fissure so far as this stripping extends, extending almost vertically dipping to the west, or dipping to the north upon which the Dunstan stope and Dunstan raise follow, and this condition extends down 35 feet, and there the flat ore body is intersected.

Cross-examination.

By Mr. DICKSON:

Q. Do I understand you Colonel, to say that the stripping shown on Exhibit 20 from the air shaft to station 904 is on a vertical fissure?

A. Yes, sir; nearly vertical; perhaps 75 degrees.

Q. I just wanted to know if I understood you correctly?

A. Yes.

Q. Now with the additional light which has led you to the conclusion that there are two veins here, a bedded vein and a fissure vein, can you tell us which of the ore bodies under the Fairview Northern Light, Grizzly and Jordan Extension belong to the fissure vein and which to the bedded vein, under which title you claim them?

A. That I suppose my attorneys will answer. As to the structural origin I have marked a line already upon the map as to that
313 portion which relates in its origin to the Ashland fissure; otherwise it would be a bedded vein.

Q. You understand do you not that you and your attorneys by your answer are claiming title to all the ore bodies under the Fairview, Northern Light, Grizzly and Jordan Extension?

A. All the ore bodies which we have developed.

Q. All you know anything about?

A. All we have developed and all that we have claimed as having the apex within one or the other of the claims.

Q. Do you not claim the ore under the Northern Light?

A. Yes, sir. We claim all the ore developed by the apex of these two claims without reference to what the surface claim is, whether called Northern Light, Fairview, Grizzly or anything else; claim them all.

Q. Now those under the Fairview and Northern Light under which title do you claim those; Ashland title or the Kempton title?

A. Chiefly under the Ashland title; that is, I will recall that answer, I beg your pardon—the division of the right as between the parties I do not undertake to pass upon.

Q. I will put it in another way? You claim the ores under the Fairview and the Northern Light where I am pointing and in which we find stations 792, 793, 798, 796, that ore body out there, do you claim that is in the Ashland or Kempton claim?

A. What?

Q. That ore body partly in the Fairview and partly in the Northern Light; which vein do you say that is in?

A. We claim that is in the Ashland vein, claim those in the Ashland vein.

Q. The ore under the Jordan Extension; in which vein do you say that is?

A. That portion of the ore which was found, which occurs in the bed to the east under the Jordan Extension and a portion of it to the west, I insist a part of it belongs to the Sampson and a part to the Kempton.

Q. A part to the Kempton and a part to the Sampson?

A. The stope is certainly to some extent if not altogether in the Sampson fissure.

Q. You say then that you do not claim it under the Kempton bedded vein or Ashland fissure vein?

A. Well, so far as the work has proceeded there has been no occasion; the question of ownership is not controverted, because so far as the developments have gone they are under the Ashland or under the Kempton or nearly so.

Q. Wait a minute; according to this map these are the lines of the Jordan Extension and here is a large ore body out under the Jordan Extension; is that in the Ashland or the Kempton vein?

314 A. Here is another line which you seem to overlook; here is the line of the Ashland and the ground in conflict with the Jordan Extension I think is embraced in the Ashland.

Q. Now the part lying easterly of the side line of the Ashland and under the Jordan Extension do you claim that is in the Kempton vein or Ashland or in neither of them, or in the Sampson vein?

A. I have not reached that question. However, when the question arises I shall claim all ore that can be shown to be due to the bedding, to the ore found in the bed, as suggested by this drift and that drift as being a part of the Kempton vein.

Q. The part of the ore in the Sampson claim, you do not claim?

A. I am not called upon to give away anything and I have made no claim about it; there may be some other claim hereafter.

Q. The ore in the Sampson fissure and beneath the Jordan Extension, a part of it is not in either the Ashland or the Kempton vein.

A. At that specific point it may not be beneath the surface, but it may transpire however that the apex of the Sampson fissure may be in the Kempton; I don't know; we have not reached that question yet.

Q. So you don't know whether you claim it or not now? If you do claim it, I want to know by what title you claim it; what vein you think it is in. If you do not claim it I care nothing about it?

A. I suppose that the papers filed are broad enough to show what we claim. We claim all we have asked for and have endeavored to prove it.

Q. And then it will not be disputed that the answer claims the ore body to which I am directing your attention. If that ore body lying vertically beneath the Jordan Extension and south of the easterly side line of the Ashland, in which we find the words "Upper stope" on this Exhibit 21, do you claim that that is either in the Kempton vein or the Ashland vein?

A. I think the stope is in the Kempton vein; the upper stope extends out from the fissure but there are two stopes; there is a faint line beneath and then this hatched portion called Lower stope; which I understand to be from this stope below the level of the tunnel. That stope I have said is clearly within the lines of the Sampson fissure.

Q. Now this is the upper stope as marked upon this map?

A. I see it appears to be.

Q. Do you dispute the fact, from your knowledge, do you dispute the statement that the ore in this stope marked upper stope is not laminated?

315 A. I have never examined it. The facts are there is very little ore left there to determine what may have been the structure; it is all mined out, leaving only some fragments, small pieces of ore through it; the ground has caved and it is very dangerous ground; however I have not thought of what the structure is, because I have not thought seriously about that part of the mine.

Q. Then it comes to this, so far as this working called the upper stope is concerned, you don't know whether it is in either the Kempton vein or the Ashland vein or some other vein?

A. I do not, I do not; I don't know that this drift or that drift which seem to be on the same horizon, I do not know that they are in the same beds these others are, because——

Q. There is another ore body which is not in question on this trial. I will ask you under which vein you claim it?

A. That is not in question here.

Redirect examination.

By Mr HILES:

Q. Counsel directed your attention to some ore bodies which have not been testified to before, lying out in this north country that you say you claim under another suit?

A. Yes, sir; precisely; we have brought suit for those.

Q. By the Ivanhoe Mining Company and yourself as lessee against them to recover possession of the lode there?

A. Yes, sir.

Objected to.

Q. I will ask you Col. Wall, if it is not a fact that this country

which lies over to the north is not north of the band of quartzite which passes through the top of Jordan Hill and which has been testified to by the witnesses?

A. Yes; it is north.

Q. I will ask you if that ore body there does not lie in a different body of lime from the ore bodies which were on the south side of the hill?

A. Yes; entirely different lime beds. It is separated by over 200 feet I think, I don't know the distance, a considerable distance and divided by the quartzite band.

Q. By the intervening quartzite?

A. Yes, sir.

Q. Isn't it the fact the foot wall of these ore veins and of the lime in which these ore veins occur, is the quartzite running across the top of the Mountain? That is to say this quartzite running across the top of the mountain intervenes between the lime beds in which these ore veins are and this ore?

316 A. Oh, yes, but the Ashland fissure passes through the quartzite.

Q. The Ashland fissure cuts through this bed of lime?

A. Yes, sir.

Q. In which this mine is?

A. Precisely.

Q. And goes through the quartzite over the top of the mountain and cuts the lime in which these ore veins are situated?

A. Yes, sir.

Q. So that they are different mines are they not?

A. They are—not different; it would still be a portion of the Ashland fissure and ore bodies but in a different horizon with reference to the country rock in which the fissure occurs.

Q. In which the mines occur?

A. Yes, sir; and as applied to the Kempton bedded vein then they would be different mines.

Q. What is the distance from the ore body here and the ore body there, that is the distance laterally?

A. These lines are on different levels, I think some 140 or 50 feet lower than this—at a guess it is probably 200 or 250 feet.

Q. And on the other side, the north side of the quartzite?

A. Yes, sir.

Cross-examination.

By Mr. DICKSON:

Q. Colonel Wall, are you not entirely mistaken in saying that the ore body here is not in the same limestone that we have here at the Kempton surface?

A. Not at all.

Q. Is it not true that there are two beds of limestone running through the country parallel to each other with the intervening body of quartzite?

A. Yes; but not in the direction you show.

Q. Substantially?

A. Parallel to that.

Q. And this lower bed, the one that you have in the Kempton has an average dip of about 30 degrees from the horizontal and as you go down it passes under the upper belt of limestone?

A. Precisely.

Q. Necessarily?

A. Yes, sir.

Q. Have you observed in any of the works—I have not got this so as to represent accurately the angle of the dip but it does not matter for my purposes. Have you observed anywhere in the limestone belt in which the Kempton claim is located that the contact between the foot wall quartzite and the lime goes down at its normal dip of about 30 degrees and then rolls and raises up and turns over another roll and then assumes its normal dip again and that there is ore on the contact continuous right down and up over the roll in
317 that way in the belt of limestone upon which the Kempton is located?

A. Yes, sir.

Q. You have observed that?

A. Yes, sir.

Mr. DICKSON: That is all.

Mr. HILES: That is all.

WITNESS: One moment, with a qualification, yes.

Mr. HILES: You may make any qualification you want to.

WITNESS: Instead of a fold in the manner suggested by counsel and then down again, I say if this question assumes a continuous fold no, but I have observed this condition in a very important mine in the neighborhood and entirely disjoined there (Indicating) and a suggestion of a separation of this piece from the other, in another mine in another part of the district, or at least, near by—not a continuous fold, that does not exist in any part of the formation in either of the mines—a fold a break-fold, but they are called folds. In the formation throughout the Kempton mine there is not a suggestion through the section all the way across there of any warping or bending in the structure of the rocks down as far as we have gone; it is 500 feet deep and within 140 feet of the level over it.

Redirect examination.

By Mr. HILES:

Q. I will ask you if sometimes the folds in the earth's strata are occasioned by faults as well as by flexures? Do you know that?

A. How is that.

Q. The folds in the strata of the earth, whether they are sometimes occasioned by faults as well as by flexures extending over large areas of country? Faults frequently occur as the results of flexures or flooding of the strata?

A. Frequently, frequently; and that is what has happened in the case the gentleman referred to.

R. G. LEGG, a witness produced by defendants, being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Mr. Legg, what is your business?
A. Mining.
Q. How long have you been mining?
A. Something over 30 years.
Q. How old are you?
A. Fifty years of age.
Q. Where have you mined?
A. In the States of Utah, California, Idaho, Nevada, and Montana.
318 Q. Do you know the West Mountain Mining District?
A. I do.
Q. You are pretty well acquainted there? How long have you mined there?
A. I have mined there off and on since 1883.
Q. In what capacity?
A. All capacities.
Q. Are you acquainted with the Ashland and Kempton mines?
A. To some extent.
Q. You have had occasion to examine them?
A. I have.
Q. How extensively have you examined them?
A. Well, not as much as I would be pleased to for the purpose of testifying.
Q. How many days have you spent there, do you think?
A. Well, a portion of one whole day and a portion of four.
Q. Now, I will confine your examination to the question of whether there is a bedded vein structure in the mine in the Kempton, and the fissure structure in the Ashland; did you in the course of your examination of the mine observe anything of that sort? A difference in the structure?
A. There is a difference in the structure.
Q. You observed it, did you?
A. I did.
Q. How does it appear in the Ashland as compared to the Kempton?
A. I would have to make some explanation there; there is no sharp line of division, but in the planes of stratification in the rocks before the occurrence of the fissure there has been—the beds have not faded but the fissure structure and the influence of the fissure extends for considerable distances from the original fissure.
Q. Well, describe in your own way, Mr. Legg, the points where there is no apparent division or demarcation in the structure of the bedded vein, so-called and the fissure vein so-called.
A. In regard to the fissure vein, I would want to say this, that though there has been no disturbance, I think (goes to map Exhibit

21). I could have explained the proposition properly by following up the proposition as I started out.

Q. Explain it in your own way, how you observed the fissure and how you observed the bedded vein, and where was the line of demarcation, in your own way, any way you want to?

A. There is a system of fissures occurring through the bedding planes, the beds of course existing there prior to the occurrence of the fissure, but the bedding planes have not been disturbed by the replacement, but the fissure structure and extend out to certain distances and reach certain boundaries. That pertaining to the Ashland fissure itself I have found to extend to 416 or about a
319 little east of 416 on the Turnsheet level. On the Turnsheet level and slightly east of 513 on the West drift and along about this line above what you call the Copper drift.

Q. How is that marked there?

A. It would be about 20 feet possibly east of station 210.

Q. In the Copper stope?

A. In the Lead stope.

Q. 30 feet to the east of station 210 in the Lead stope?

A. About 20 feet.

Q. East of station 210 in the Lead stope, is that it?

A. Yes.

Mr. DICKSON: Is that upon the Copper level?

Mr. HILES: That is a little above the Copper level.

WITNESS: This is a little below.

Q. The Copper level?

A. Yes; I think it is.

Q. Is the Lead stope below the Copper level?

A. Yes; it appears to be. Now within the boundaries, the bedding planes are not altogether destroyed, but the fissure structure, the laminations occur very frequently, in fact very closely clear from the point I have named to the extreme west faces. The only difference that I see between the fissure structure and the bed planes—that is where you can define one from the other at considerable distances, possibly the sulphides or ores instead of turning up nearly vertical parallel with the fissure, they work off—that is the sulphides and ores work off in the bedding planes of the strata.

Q. They get flatter and flatter with the strata?

A. Yes, sir, and are not so much——

Q. Did you make any observation upon he Sampson fissure as to whether the alterations of the stratifications occur there?

A. They do not occur here in the fissure, and in the Sampson fissure they do not extend so far out as they do from the Ashland fissure, but apparently the ores are more confined to the fissure. I think the same applies to the Kempton fissure.

Cross-examination.

By Mr. DICKSON:

Q. You say you have worked in this West Mountain Mining District? Ever work in the Brooklyn mine?

A. I did.

Q. That is on this same lime belt?
A. I would not say yes or no.
Q. Have you an opinion upon that?
A. I have somewhat of a doubtful opinion.
Q. The lime is about the same width?
A. Well, in a general way.
Q. A very general way?
A. Yes, sir.

320 Q. Is it your opinion that the limestone where the Brooklyn is located in which you have worked, constitutes the vein from quartzite to quartzite?

Objected to as not cross-examination. Sustained.

Recess until 2 o'clock.

Mr. HILES: That I believe is our case, except we want to supplement our paper title which we will have ready this afternoon. We will rest with that statement.

Recess until 2 P. M.

The COURT: Are your papers ready now?
Mr. HILES: Not ready yet.
The COURT: Well, we will go on with the rebuttal.

And thereupon said plaintiff, to further maintain the issues on its part, in rebuttal gave in evidence the following, that is to say:

Mr. SUTHERLAND: We will offer our title to the Jordan and Mountain Gem Mining claims. The first is the old Jordan. I offer in evidence what purports to be an exemplified copy of the various papers upon which the patent to the Old Jordan was granted, including the patent itself, certified to by the Commissioner of the General Land Office, the purpose of it being to show that the patent in addition to proving title to the claim, that the patent was granted upon the location notice which was annexed to the transcript, showing the location in 1865. We claim that this vein is a broad vein, not merely the ore body which they have testified to, but it is a vein which is from 125 to 200 feet in width, and that their claim is laid upon a part of the width of the apex and we claim the Jordan and Mountain Gem are laid at another part of the apex, and we claim that under the law and decisions that where two claims are located upon a broad apex, the one which is oldest in point of time is oldest in point of right, the oldest claim taking the extralateral rights for the entire vein. Now the rule is also to the effect that when a patent has been granted that the patent relates back to the first step, viz: to the location; and in order to show that our right is older than theirs we must go back to the location notice and we must go further as the authorities say and show that from which we deraign our title from the United States was based upon that particular location notice so as to tie our rights back to it. That is the purpose of it.

321 Mr. HILES: We object for the reason that it does not appear that the location notice of the Old Jordan is material. This will involve a law question which will have to be decided but of course we are not conceding that the older location takes the whole.

We claim that having an older patent, if there be but one lode, if as they claim there be a broad lode—we claim there is a lode there in the Kempton and Ashland ground—but if there be a broad lode that we having the older patent, would take under the decisions the extralateral rights as against the junior patent with a senior location, and at this time I only want to note the objection and save an exception.

The COURT: It will be admitted subject to your objection without a ruling at this time.

Mr. SUTHERLAND: To make the record clear, I will state that the exemplified copy shows the notice of location of the Jordan S. N. M. Co. by Archibald Gardner and quite a number of others and bears date September 17, 1863; is purports to locate 5200 feet in length—that was before any mining law had been passed, and the patent is from the United States to Liberty E. Holden and conveys the 5200 feet. The plat annexed to it shows its relation to the other claims and that bears date of the 14th of July, 1877.

Said copy was marked "Exhibit U, J. W. C."

Mr. SUTHERLAND: Now, I offer in connection with that a certified copy of the location notice, the same location notice, which is certified by the recorder of this county.

There being no objection, the same was received in evidence and marked "Exhibit V, J. W. C."

EXHIBIT "V."

Notice. Jordan S. M. Co.

The undersigned members of the Jordan Silver Mining Co., claim for mining purposes one share of two hundred feet each and one additional claim of two hundred feet for original discoverer George R. Ogilvie on this lead of mineral ore with all its dips, spurs and angles beginning at the stake situated one hundred feet North East of Gardner's Shanties in Bingham (Canion) Kanyon in West Mountain and running Two Thousand two hundred feet in a westerly direction along the side of said mountain on a line with
322 Bingham Canyon and intend to work the same according to the mining laws of this Mining District.

Archibald Gardner	1	share.	M. G. Lewis	1	share.
George B. Ogilvie	2	"	Alex Benstull	1	"
Alix Ogilvie	1	"	James Finnerthy	1	"
P. E. Conner	1	"	Samuel Egbert	1	"
R. C. Drum	1	"	G. W. Carlton	1	"
Wm. Hickman	1	"	Neil Anderson	1	"
Robert R. Reid	1	"	Edward McGarry	1	"
John Harcastle	1	"	W. J. Jenkins	1	"
C. J. Sprague	1	"	H. O. Pratt	1	"
Thomas Benstead	1	"	Robert Pollock	1	"
James Briniger	1	"	Daniel McLein	1	"
Henry Bensted	1	"	N. B. Eldred	1	"
Hugh O. Donnell	1	"			

Bingham Kanyon, Salt Lake City Utah Territory, Sept. 17", 1873.

A. GARDNER, *Recorder.*

TERRITORY OF UTAH, *County of Salt Lake, ss:*

Henry Thompson being duly sworn according to law says that the foregoing is a complete and correct abstract of record of the Jordan S. M. Co., as found in the office of the Recorder of the West Mountain Mining District, Salt Lake County, Territory of Utah.

HENRY THOMPSON,
Recorder of West Mountain Mining District.

Subscribed and sworn to before me this 13" day of October, A. D. 1873.

A. S. GOULD,
Notary Public.

Filed for R. Oct. 13, 1873, at 3 P. M. Recorded same day.

I, Angus M. Cannon, recorder in and for Salt Lake County, do hereby certify that the above and foregoing is a full true and correct copy of a Notice of Location of the Jordan S. M. Co., as recorded in Book "B" of Mining claims agreements, &c., page 314 in my office this the Thirteenth day of November, A. D. 1876.

ANGUS M. CANNON,
[SEAL.] *Recorder Salt Lake Co.,*
By J. W. TAYLOR, *Dep. R.*

Filed in U. S. Circuit Court, District of Utah, Oct. 23, 1902. Jerrold R. Letcher, Clerk.

323 Mr. SUTHERLAND: I have an abstract that is certified to by the same company, the Utah Savings & Trust Co. and I offer in evidence now what purports to be an abstract of a deed from L. E. Holden, patentee, to the Old Jordan Mining & Smelting Company of Utah, bearing date July 20th, 1877, properly acknowledged, which conveys among other property the Old Jorden mine.

Next what purports to be an abstract of a deed from the Old Jordan Mining and Milling Company to the Old Jordan and Galena Mining Company, a corporation, bearing date September 2m 1891, and purporting to convey the same property conveyed and described in the patent.

Next a deed from the old Jordan and Galena Mining Company and others to Clarence A. Hight, conveying the old Jordan lot 64, being the claim patented and other property, bearing date February 27th, 1899, properly witnessed and acknowledged.

Also a deed from Clarence A. Hight and wife to the United States Mining Company this same lode, bearing date April 4th, 1899, these instruments being mentioned on pages 24, 60 and 61 of said abstract.

Mr. HILES: We wish to make the same objection to these as we did with respect to the location notice.

The COURT: They will be admitted.

Said pages were marked respectively "Exhibit W, J. W. C." and "Exhibit X, J. W. C."

Deed Recorded
"I" 490.
Aug. 4-77
10.00 A. M.

L. E. Holden
to
The Old Jordan Mining and
Smelting Company of Utah.

QUIT CLAIM DEED
Dated July 20, 1877
Ackd. July 27, 1877
Witnessed O. K.
Consideration $6,000.00.
CONVEYS: Beginning at post on south side of Bingham Canon Railroad grade, said post being north 70° 33′ east 444 ft. from the northeast side of Bingham Canon Railroad Bridge across Jordan River, thence north 83° 40′, east 1447 ft., thence south 362 ft., thence south 89° 45′ west 590 ft., thence south 83° 40′ west 401 ft., thence north 3° 05′ west 248 ft., thence north 89° 27′ west 437 ft., to the place of beginning, containing 7.53 acres.

Beginning at a point north 4° 30′ west 15.9 rds. from southwest corner of Lot 3, Block 9, SANDER'S SURVEY, thence south 81° 30′ west 43.3 rds., more or less, to east bank of Jordan River, thence down east bank of Jordan River North 50° 30′ west 16 rds., to south line County Road east and west, thence on south line said road north 85° 15′ east 21 rds., thence east 31.8 rods, thence south 4° 30′ east 15.6 rds., to the place of beginning, containing 5.94 acres, situate on Lot 1 of northeast 1/4 of Section 35, Township 2 south, range 1 west of Salt Lake Meridian.

ALSO canal extending from River Jordan and terminating about 400 ft. from Bingham Canon and Camp Floyd Railroad, with all water privileges thereunto belonging, or however the aforesaid parcels of land and property may be otherwise described and known.

ALSO GALENA, LODE, AMERICAN FLAG MINE, and JORDAN SILVER MINING CO.'S MINING CLAIM known as the JORDAN Mine or West Jordan Mine

UNITED STATES MINING CO.

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or Lode, in West Mountain Mining District, Bingham Canyon, Salt Lake County, Utah. Said GALENA Lode being Lot 39, patented to Isador Morris, etc.

SUBJECT to any and all contracts and agreements heretofore made by grantor in regard to joint occupancy of surface ground contained in survey for patent on said Jordan mining claim, and subject to any and all rights belonging to grantor or Old Telegraph Mining Company under lease dated Dec. 1, 1876.

ALSO all rights in claims which may have accrued or obtained to himself or the Old Telegragh Mining and Smelting Company by reason of payment for construction or improvement on said property or any part thereof or as a stockholder of said Old Jordan Mining and Smelting Company.

Filed in U. S. Circuit Court, District of Utah. Oct. 23, 1902. Jerrold R. Letcher, Clerk.

Deed Recorded
N" 210.
Sept.17-91
3.30 P. M.

Old Jordan Mining and Milling Company, by L. E. Holden, President, Robert Harkness, Secretary.
to
Old Jordan and Galena Mining Company, a corporation.

MINING DEED.
Dated Sept. 2, 1891,
Ackd. Sept. 2, 1891
Witnessed O. K.
Consideration $10,000.
Pursuant to resolution of Board of Directors passed Aug. 28, 1891.
CONVEYS all its right, title and interest in and to the following mining claims, situate in Bingham Cañon, West Mountain Mining District. Salt Lake County, Utah, to-wit: The Jordan Silver Mining Company's First Mine, as described in U. S. Patent, the GALENA Mine, the American Flag Mine, the Mary Ann, the Excelsior Mine, and the following described mining claims: The Kingston, West Jordan Extension, Excelsior No. 2, the Protector, the Mastedon Tunnel, the Galena Tunnel, the Little Mattie, the Rainbow, the Railroad, the Steamboat, the Hampton, also the Jordan Tunnel and all mining tools, etc. For further description see records of West Mountain Mining District.

ALSO the following land in Section 26, Township 2 South, Range 1 West: Beginning at the southwest corner of Lot 8, said Section, on east bank of Jordan River, thence north 83 1/2° east 124 rds., thence north 49 rds., thence 1 1/2° east 88 rds., thence north 78 1/2° east 57.4 rds., thence west 4° north 111 rds., to Jordan River, intersecting said River 3 rds. south of intersection of raid river by the east and west 1/4 Section line of said Section, thence up along said River to the place of beginning, containing 96.84 acres, except a burying ground, containing.....acres.

X[1].

Apr. 12-99
5.00 P. M.
No. 127668

The Old Jordan and Gelena Mining Company, a corporation,
by A. F. Holden, Vice President,
Edward B. Wicks (1)
E. E. Rowe, (2)
Gertrude E. Rowe (3)
Albert F. Holden (4)
Kate D. Holden (5)
by Robert Harkness, her atty. in fact,
Liberty E. Holden, (6)
by Albert F. Holden, his atty. in fact,
Delia E. Holden, (7) by Albert F. Holden, her atty. in fact,
to
Clarence A. Hight.

BARGAIN AND SALE DEED
Dated Feb. 27-99
Ackd. Feb. 27-99
Witnessed O. K.
Consideration $1.
CONVEYS the GALENA Lode Mining Claim Lot No. 39, the AMERICAN FLAG Lode Mining Claim, Lot No. 278, the BUCKEYE Lode Mining Claim (except the easterly 300 ft. in length by the full width thereof), Lot No. 88, the HIGHLAND Lode Mining Claim, Lot No. 164, the SOUTH ELDORADO Lode Mining Claim, officially surveyed but not patented, and designated as Lot No. 386, the KINGSTON Lode Mining Claim, officially surveyed but not patented, and designated as U. S. Survey No. 3557, the DEFIANCE Lode Mining Claim, recorded in book "M," page 69, the RAINBOW NO. 2 Lode Mining Claim, recorded in book "F," page 681, THE JORDAN Lode, Lot No. 64, West Mountain Mining District, Salt Lake County, Utah. (Also other property.)
All in Salt Lake County, Utah.

(1) unmarried, (3) wife of (2), (5) wife of (4), and (7) wife of (6) in body of deed and acknowledgement.

EXHIBIT "X²."

Deed Recorded
Apr. 12–99
5.00 P. M.
No. 127272

Clarence A. Hight
Emily L. C. Hight, (1)
to
United States Mining Company,
a corporation of State of Maine

MINING DEED
Dated Apr. 4, 1899
Ackd. Apr. 4, 1899
Witnessed O. K.
Consideration $1.00, etc.
CONVEYS the JORDAN Lode Mining Claim, Lot No. 64, the GALENA Lode Mining Claim, Lot No. 39, the AMERICAN FLAG Lode Mining Claim, Lot No. 278, the BUCKEYE Lode Mining Claim, Lot No. 88, the HIGHLAND, Lot No. 164, the NORTH ELDORADO Lode Mining Claim, Lot. No. 385, the SOUTH ELDORADO Lode Mining Claim, Lot No. 386, the KINGSTON Lode Mining claim, survey No. 3557, the RAINBOW No. 2 Lode Mining Claim, location recorded in book "F," page 681, the DEFIANCE Lode Mining Claim, location recorded in book "M," page 69 (and other property), West Mountain Mining District, Salt Lake County, Utah.

(1) wife in acknowledgement
(1) does not appear in body of deed.

Filed in U. S. Circuit Court, District of Utah. Oct. 23, 1902. Jerrold R. Letcher, Clerk.

329 Mr. SUTHERLAND: Now I next offer an exemplified copy of the papers upon which the patent to the Mountain Gem mining claim was issued for the same purpose.

Mr. HILES: We wish to make the same objection as respects the notices of location of this pretended claim.

The COURT: It will be admitted on the same conditions as the others.

Mr. SUTHERLAND: This exemplification shows the notice of the location of the Mountain Gem claim by I. M. Merrill and others of 1600 feet and describing it, dated August 20th, 1864.

Said exemplification was then marked "Exhibit Y, J. W. C."

Mr. SUTHERLAND: The patent in this Exhibit Y is to the Old Jordan and Galena Mining Company of the Mountain Gem claim and bears date July 18th, 1898, and conveys 470.75 feet in length along the lode.

Mr. SUTHERLAND: In connection with that I offer the notice of location duly certified by the Recorder of Salt Lake County, of the Mountain Gem, being the same as the copy of the exemplification before offered.

Mr. HILES: I have no objection except the objection I have already made, as being immaterial.

Said notice of location was marked "Exhibit Z, J. W. C."

EXHIBIT "Z."

Notice. Mountain Gem Co. & Lode.

We the undersigned claim Sixteen hundred feet of this lode known as the Mountain Gem with all the dips spurs angles off shoots & variations & intend to work the same according to the mining laws of this district. Said claim is situated W. of the Pollock commencing at a cut in the hill & running S. two hundred feet to a gulch & N. fourteen Hundred feet from said cut parallel with the Pollock lode.

See Book M page 33

I. N. Merrill	2	shares
R. F. Dusky	1	"
Bernard Hanlon	1	"
Robert Pollock H. M. May. Feb. 14 1867		
Wm. M. Johns	1	"
Lemuel Langell	1	"
Joseph Donley	1	"

located Aug. 20th 64
Recorded Aug. 24th 64
Bingham Canyon West Mo'nt'n Dist.
Jas. S. Warren Dept. Recd.

Relocated as the Ameer see Book "M" page 356

330 *Certificate.*

STATE OF UTAH, *County of Salt Lake, ss:*

I, Thomas Alston, County Recorder in and for said County, do hereby certify that the annexed instrument of writing is a full, true and correct copy of the Notice of Location of the Mountain Gem Lode Mining Claim, situate in West Mountain Mining District, Salt Lake County, State of Utah, as the same appears of record in Book "B" of Locations, at page 12, records of said District; which said records, pursuant to an Act of the Legislative Assembly of Utah, are now in my lawful custody.

Witness my hand and Official Seal, at Salt Lake City, Utah, this Eighteenth (18th) day of October, A. D. 1902.

[SEAL.] THOMAS ALSTON,
Recorder Salt Lake County, Utah.
By A. E. CARR, *Deputy.*

Filed in U. S. Circuit Court, District of Utah, Oct. 23, 1902. Jerrold R. Letcher, Clerk.

Mr. SUTHERLAND: I next offer in evidence abstract of deed from the Old Jordan and Galena Mining Company and others to Clarence A. Hight, bearing date February 27th, 1899, which purports to convey the Mountain Gem lode mining claim lot 475 and other property, contained on page 2 of the last portion of the abstract, and sheet 3 following it, which purports to be a deed from Clarence A. Hight and wife to The United States Mining Company, the plaintiff herein, dated April 4th, 1899, purporting to convey the Mountain Gem lode mining claim, lot 475, and other property.

There being no objection, the same was received in evidence and marked "Exhibit AA, J. W. C."

331 EXHIBIT "AA."

Deed Recorded "S" 1. Apr. 12-99 5.00 P. M. No. 127668.	The Old Jordan and Galena Mining Company, By A. F. Holden, Vice President,* Edward B. Wicks, unmarried, E. E. Rowe, Gertrude E. Rowe, wife, Albert F. Holden, Kate D. Holden, wife, by Robert Harkness, her attorney in fact, Liberty E. Holden, Delia E. Holden, wife, by Albert F. Holden, their attorney in fact, to Clarence A. Hight.	MINING DEED Dated Feb. 27, 1899 Ackd. Feb. 27, 1899 Witnessed O. K. Consideration $1.00 etc. CONVEYS the MOUNTAIN GEM Lode Mining Claim, Lot No. 475 of the official surveys of the United States within and situated in the West Mountain Mining District, Salt Lake County, Utah. (Also conveys other property).

* By authority of a resolution of its stockholders and another resolution of its Board of Directors.

EXHIBIT "AA" (2).

Deed Recorded
"S" 14.
Apr. 12–99
5.00 P. M.
No. 127672

Clarence A. Hight,
Emily L. C. Hight, wife,
to
United States Mining Company,
a corporation under the laws
of Maine.

MINING DEED.
Dated Apr. 4, 1899
Ackd. Apr. 4, 1899
Witnesses O. K.
Consideration $1.00 etc.
CONVEYS the MOUNTAIN GEM Lode Mining Claim, Lot No. 475 of the official surveys of the United States within and situated in West Mountain Mining District, Salt Lake County, Utah. (Also other property.)

The intention being to convey hereby without reserve and absolutely all right, title and interest whatsoever acquired by first party by deed of The Old Jordan and Galena Mining Company and others dated Feb. 27, 1899, etc.

Filed in U. S. Circuit Court, District of Utah. Oct. 24, 1902. Jerrold R. Letcher, Clerk.

333 J. FEWSON SMITH, a witness produced by plaintiff in rebuttal, and having been already sworn herein, testified: Direct examination.

By Mr. DICKSON:

Q. I wish to direct your attention to a number of maps, and call your attention first to a map entitled "United States Mining Company, Old Jordan, Niagara, etc. 80 feet to the inch" and ask you who prepared that map?

A. I did.

Q. A portion of it from surveys of your own and a portion of it from surveys of somebody else?

A. Well, a very little of other surveys were used in the compilation.

Q. Principally all of it was the result of your own surveys?

A. 99 per cent of it at least.

Q. And that which is not platted from surveys made by yourself from whose notes did you plat it?

A. I simply made a copy from old maps in possession of the United States Mining Company, mentioned on the lower right hand corner of the map.

Q. Do you know who made these notes?

A. I think Mr. Holden did and some being directed to be made by him.

Q. You could point out such if you were called upon to do so?

A. Yes, sir.

Q. And according to your surveys made by you in person and the notes that you used, is the result correctly platted upon this map?

A. It is. (Map marked Exhibit BB, J. W. C.)

Mr. DICKSON: This map has already been received in evidence, although I did not interrogate the witness about it. Counsel may do so if they desire.

Q. Did you say this map was made by you?

A. Yes, sir.

Q. The map that is marked Exhibit S?

A. Yes, sir.

Q. And from surveys made by you of the surface and underground workings?

A. That is a map of the underground workings.

Q. And the surface of the claims are shown?

A. The surface boundaries, yes, sir.

Q. The surface boundaries on this and all other maps are the same as on the surface map you were examined about some days ago?

A. Yes; they are.

Q. The underground workings upon this map are the result of surveys made by you in person?

A. Yes, sir.

Q. And they are all correctly represented upon that map?

A. Yes, they are.

334 Q. On the surface maps. I will ask you if you used on each one the same color to represent the same level?

A. I have.

Q. The red on this represents what level?

A. What we know as the Mill level and called the No. 2 West drift and also the Emma West drift, all approximately on the same level.

Q. And wherever we find the red coloring on other drifts it will mean that same line of work?

A. That same level, yes.

Q. The workings to which I am pointing now and which were colored yellow; is that the color?

A. Yes, sir.

Q. What level are all the yellow workings on?

A. The No. 1 West drift.

Q. Now there is some work in green; what level is that?

A. What we call the Utah and Drain level.

Q. The difference in elevation between these various levels is marked in many places upon this map?

A. The various stations shown by the circle on a level is numbered in red with the elevation in black below it.

Q. The number in red represents the station number?

A. Yes, sir.

Q. And the figures in black in juxtaposition therewith represent the elevation at that point?

A. They do.

Q. What do you call this color?

A. That is a modified black.

Q. Marked in one place Lower Utah level?

A. No; the 500 level.

Q. That color represents the workings on practically the same level wherever it is put on and that is on practically the 500 foot level?

A. Yes, sir.

Q. Now the workings in purple represent the Neptune Tunnel Level and its varying branches?

A. Yes; it does.

Q. And corresponds practically with the map of defendants?

A. Practically, yes, sir.

Q. And the workings in——

A. Orange red or brick red.

Q. That represents what is called by our friends on the other side the Turnsheet level?

A. I think that is the Turnsheet level, yes.

Q. And this in yellow or lighter orange is what is represented on the other map as the Copper drift level?

A. Yes; I think that is the way it is described there.

Q. And the green out at the western portion of the map is?

A. Represents the Neptune level.

Q. So that we have two greens here which are not on the corresponding level. This is also representing the upper Neptune?

335 A. It is practically on the same level as the Upper Neptune, yes.

Q. And this marked Ashland tunnel is what is marked on defendants' map as the Ashland No. 2?

A. I think that is correct without examining it carefully.

Q. The scale of the map is correctly noted there?

A. Correctly noted there.

Q. And the Mountain Gem and the Jordan lot 64 are correctly laid upon that map according to your surveys in the field?

A. Yes, sir.

Q. I call your attention to the map which is marked Exhibit T for identification and I will ask you if all the surface openings and underground workings, so far as there are any underground workings upon that map, have been platted from surveys made by you?

A. With two exceptions, yes, sir.

Q. What two exceptions?

A. There is some information I got from Mr. Jessen.

Q. Point out what it is?

A. It is the open cut from a point near the station marked S 37 and running along the surface of the mountain I secured from Mr. Jessen.

Q. That is the cut running from station 37 to surface station 49 and beyond?

A. And beyond, yes.

Q. What else?

A. I think that is about all I have got on this surface map.

Q. I see some color here in red and some in blue; at whose direction did you put that color upon the map?

A. A. F. Holden and Mr. Tyler.

Q. Mr. S. W. Tyler?

A. S. W. Tyler.

Q. The size of the workings that are so colored in red are from actual surveys, are they?

A. They are.

Q. And it is the color only that you put in at the instance of those gentlemen?

A. That is what you asked me about, the color.

Q. I call attention to the map marked CC and ask you if all the workings on that map have been platted from surveys of your own?

A. Yes, sir.

Q. And correctly platted?

A. Yes, sir; with the exception of the little white drift, uncolored drift near station N 1259. I was furnished that by Mr. Jessen.

Q. All the other workings are according to your surveys?

A. Yes.

Q. And correctly platted according to your surveys?

A. Certainly.

336 Q. All the maps that you have prepared except the one to which I first directed your attention, are on a scale of 30 feet to the inch?

A. Without exception.

Q. The one I first directed your attention to is on a scale of 80 feet?

A. Yes, sir.

Q. I call your attention to map marked Exhibit DD, and ask you if all the workings upon that map have been platted by you from your own surveys?

A. Yes, sir.

Q. And are correctly platted?

A. Correctly.

Q. I now direct your attention to a map marked Exhibit EE, and ask you if the workings there platted are platted from surveys made by you and if they are correctly platted?

A. They are.

Q. Now I direct your attention to Exhibit FF and ask you if the workings shown thereon have been correctly platted from surveys made by yourself?

A. They have and are.

Q. On this and some other maps there are workings in squares; I wish you would explain what that means, on every map where found?

A. The squares indicate stopes.

Q. And where square sets of timbers are put in?

A. On these maps the square sets are an exact representation of what exists upon the ground.

Q. On this particular map?

A. On all the maps of that plan.

Q. Directing your attention to Exhibit GG, state whether or not all the workings thereon have been platted by you correctly from surveys made by yourself?

A. Yes, sir.

Q. Calling your attention to Exhibit HH, I ask you to state what that is, whether a cross section or a projection upon a cross section or what?

A. It is a section with a short projection.

Q. What is the limit of the projection?

A. Within 50 feet excepting where it is noted, if there are any exceptions; I think there are none there.

Q. Unless there is a note here indicating that there has been a projection of more than 50 feet the entire projection is within the limit of 50 feet on each side of that stope on that line of section?

A. Certainly.

Q. And the works on there are correctly platted from surveys by yourself?

A. Yes.

Q. The coloring in blue and in yellow and in brown has been put on there at whose direction?

A. Mr. Tyler and Mr. Holden.

Q. I direct your attention to Exhibit JJ, sections 1, 2 and 3, and ask you if they are also cross sections on this vein?

A. Yes; they are cross sections on lines which have been laid out for me to represent in that manner.

Q. And the workings thereon are from actual surveys made by you?

A. Yes; and correct.
337 Q. Correctly platted?
A. Yes, sir.
Q. And the limit of the projection on each of these sections is what?
A. It is within the limit of 50 feet outside of the line of section.
Q. The coloring on these has been put on at the instance of some other parties?
A. The same parties yes.
Q. I direct your attention to Exhibit KK and ask you if all the workings thereon have been correctly platted on that by you from surveys made by yourself?
A. They have.
Q. And the coloring there other than of the levels has been made at the direction of what gentlemen?
A. Mr. Holden and Mr. Tyler.
Q. The squares here also represent square sets?
A. Yes; that is what they are intended to represent.
Q. Although the ore from a large portion of the ground has not been taken out and the square sets put in?
A. There are no square sets in a great many places that they appear there.
Q. But the outlines of the ore body have been determined by you from surveys and you put the square sets in at the instance of who?
A. Mr. Holden.

Mr. HILES: We have no cross examination.

ALBERT F. HOLDEN, a witness produced by plaintiff in rebuttal, having been herein duly sworn, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. What is your profession?
A. Mining.
Q. Where did you study your profession?
A. Harvard College.
Q. What branch or branches?
A. I took mineralogy, geology surveying and chemistry.
Q. When did you graduate?
A. I graduated in the class of 1888.
Q. And since then you have been following the profession of mining?
A. Yes; and all the time during vacations while at college and ever since.
Q. And ever since your graduation?
A. Yes, sir.
Q. You have examined mines in the various states and territories?
A. Yes; and countries.
Q. How long have you been intimately connected with the West Mountain Mining District?

338 A. I have known the West Mountain mining District since I was quite a small boy in 1876. I have been in charge a part of the time or all the time of a section of it from 1884 to the present time.

Q. What section of it have you had charge of practically all the time for the past 18 years?

A. With the exception of a few months I was in charge of the property known as the Old Jordan property.

Q. That embraced what claims?

A. As I recollect it there were about 25 or 30.

Q. Embracing the Jordan lot 64?

A. Yes, sir.

Q. And the Gem?

A. Yes.

Q. And many others?

A. And many others.

Q. What position in the plaintiff company do you now hold?

A. I am managing director of the United States Mining Company.

Q. And all its property?

A. And in charge of all its properties.

Q. Now I wish you would describe as briefly as possible the general geological features in the immediate neighborhood of these mines?

A. The country where these mines are located is the West Mountain Mining district and known locally as Bingham Canon. Bingham consists geologically of beds of limestone lying between beds of quartzite. Speaking generally the beds have an east and west magnetic strike and dip to the north. There is a slight curve from where the beds are first observed there on the eastern edge of the district and they bend a little to the north and south in going to the western part. The two principal beds are followed practically right straight across the district, starting from Salt Lake Valley which is on the east and terminating in the heart of the Oquirrh Mountains on the west, a total distance where they are known, worked and identified of about three miles.

Q. I will ask you whether upon that bed the Jordan is located?

A. It is on one of these belts, the upper belt lies to the north of the Jordan——

Q. You have described one belt which extends easterly for nearly three miles and been worked; I ask you if it is on that belt that the Jordan and Gem are located?

A. It is.

Q. Go on with the other belt?

A. There is another belt conformable to it lying to the north which is traced all the way but not so continuously worked. On this Jordan belt, starting on the far east where is goes under the porphyry and disappears—we do not know that the bed terminates
339 there but for a distance of about three miles there are mines and I think all of them are at the present time being worked and at a profit; and from that belt I presume that close to 80 per cent

of all the ore shipped out of Bingham in its nearly forty years of existence has come.

Q. Now this other belt of limestone which you speak of as practically parallel to this one just describe how far it is north of it?

A. It is substantially parallel and it is about, well it varies somewhat—about 300 feet to the north. And in this vast extent of territory on the lime is quartzite in most places; in certain regions it is porphyry.

Q. But speaking in a general way it is quartzite?

A. Yes, sir; it is quartzite.

Q. What is the dip of what I call the Jordan lime belt?

A. It varies from 15 to possibly 40 degrees.

Q. From a horizontal?

A. A horizontal.

Q. And pitching how?

A. Pitching to the north.

Q. And what is the dip of the upper limestone belt you speak of?

A. It is conformable to it.

Q. What is the underlying or foot wall rock of the Jordan lime belt?

A. Quartzite.

Q. From end to end?

A. As far as we know, it is quartzite throughout its entire distance.

Q. What is the upper or hanging wall of the Jordan lime belt?

A. It is quartzite nearly all of the distance; in places there is porphyry.

Q. Where the porphyry——

A. Has pushed its way up.

Q. Now coming to the Jordan belt of limestone, I wish you would describe generally how it has been affected, if at all, mechanically and chemically so as to alter it and to what degree it has been changed and altered?

A. This lime belt which was originally horizontal, has now in the process of mountain building been tilted up and in tilting it is cracked crushed, broken and shattered within itself and left a mass of entwining and interlacing fissures running across the lime, running with the lime, and running in other directions; they run in various directions and there are many thousands of them. After this was tilted up the minerals——

Q. One thing at a time; so I wont have to go back to it. These numerous fissures that you have already spoken of, are they found within the limestone belt?

A. Wholly; they never extend out of it.

340 Q. They are never in the overlying and underlying quartzite?

A. Never.

Q. Now, how, if at all, has that limestone belt been changed or altered chemically?

A. Great areas of these belts have been wholly replaced with quartz, with sulphides, with iron, copper, lead and zinc, which after-

wards may have been altered by surface action. Other sections have been metamorphosed until the entire bed structure has disappeared, and great regions of it have been silicified.

Q. To what extent if at all, is the stratification of that limestone belt, where it has been developed, observable or traceable?

A. It is with great difficulty you can find the original stratification. It is shown in certain places for short distances.

Q. What do you mean by short distances; give the longest?

A. I think the longest would be between two and three hundred feet that I know of in the lime region.

Q. At any one place where you can even find remnants of the stratification. Now further in speaking of this limestone belt give the court some idea to what extent it has been crushed?

A. In many places we find the limestone crushed so that it is in small fragments—may be even sand, but it is usually in larger fragments. At times we have great difficulty in driving a drift through it or in carrying stopes up against such a material as that. The material is so crushed and broken in many places that it will run right into the drift; and we have to do what we call dry, lagging to prevent it.

Q. Is that true, speaking of that belt of limestone generally?

A. It is not; that is only a local occurrence where it is crushed to that extent.

Q. You are speaking now of being crushed as fine as sand?

A. Yes.

Q. But the coarser crushing, where it is broken into blocks; how generally is that of the belt.

A. The belt is almost wholly broken up into blocks throughout its entire distance, and these blocks are of great annoyance to us also in working. They are liable to slip and fall. We have had men injured due to the falling out of blocks of limestone.

Q. Have you any specimens of the limestone belt where it has been changed handy, indicating the change. (Witness produces specimens.)

Q. I hand you a piece of rock marked 8, and ask you to explain to the court what evidences there are there of mineralization and metamorphism of the limestone?

341 A. This particular piece of limestone was broken out where one of the ore bodies lying conformable to it was pinching out, that is coming to a feather edge. It shows where the lime has been eaten out and shows the alteration, silicification and a little marbleization of the lime, and the replacement of the lime by the ore itself.

Q. Is the structure of the lime at all apparent there?

A. Yes; the structure of the lime at least is indicated by the deposition of the ore; it may not be the original structure, but it looks like it.

Q. The white on either side, on the outer edges of it is what?

A. Limestone; it may be partly silicified; it is all metamorphosed.

Q. And the central portion is what?

A. Is ore.

Q. Have you a specimen of what you call lime which you say has been marbleized?

A. I do not think there is a specimen there; I do not see it. There is some marbleization of the lime shown in this.

Q. You are familiar with all the underground workings of the United States Mining Company's mines; I take it?

A. I am.

Q. And are you familiar with the mines upon this limestone belt lying both to the east and to the west of the belt that portion covered by the mines of the United States Company?

A. Yes, sir.

Q. What is the width of this Jordan lime belt?

A. It has a maximum width, as far as I have been able to determine, of about 200 feet perpendicularly between the walls and a minimum width of possibly a hundred feet; I am not sure about the minimum width.

Q. Are there any places in this limestone belt with which you are familiar where you can trace the ore continuously from the underlying quartzite foot wall to the hanging wall of quartzite?

A. Yes; there are a number of places. I can show it on the 80 foot map. (Marked "Exhibit BB, J. W. C.")

Q. Commencing at the easterly end of that map Exhibit BB, confining yourself to the lime belt that we are speaking about, point where and call the names so that it will go into the record, you are first able to trace the ore from one wall to the other?

A. From the region marked on this map Black stope the ore and quartz extended from the hanging to the foot, right straight across the vein, with no lime left or shown.

Q. What do you mean by quartz?

A. I mean quartz is a mineral.

342 Q. State whether or not it was deposited in the formation of the vein.

A. It was deposited in the formation of the vein.

Q. Coming up with the solutions?

A. Coming up with the solutions that carried the metal.

Q. Now that is one place; come to the next westerly of that?

A. Then we come to the region which is on this map just beyond the north end to the east of where the words Good Fortune are; there is a section there that is wholly through quartzite and large ore bodies?

Q. On the same level?

A. On the same level.

Q. Did you follow it foot by foot?

A. Yes; foot by foot.

Q. Without encountering any lime?

A. Without encountering any lime.

Q. You can point out if called upon to do so the line of workings through which you go?

A. I can take you right through the line of workings.

Q. Between these two places where you have already testified about here you have ore and quartz from one wall to the other.

Are there any diagonal tracings between the two that reach from the foot to the hanging wall?

A. There are diagonal tracings through which I can follow in ore all the way from the section near the Black stope I have spoken of to near the Good Fortune that I can follow across from the foot to the hanging on ore; and in addition to that there are many local ore bodies away from this tracing.

Q. And within the limits of the lime belt?

A. With the lime wholly.

Q. Do I understand you correctly between the two points where you trace it at right angles from the quartzite hanging to the quartzite foot wall there are also diagonal tracings from one to the other?

A. You can go diagonally from one to the other the hanging to the foot.

Q. Go on westerly to the next?

A. The next section where it shows ore and quartz from the hanging to the foot is through the region known as the Niagara mine, and starts near the letters 3639 in black near the word "Vindicator," and there is a section there that can be seen on the surface. It goes from the hanging to the foot through an old stope right on the surface.

Q. From the hanging to the quartzite foot wall?

A. From the hanging to the foot wall.

Q. Now the country just east of the Spanish 58 and the Blackhawk 71 and west of the word "Diana;" in that space state whether the country has been developed?

343 A. Partially; as we come easterly from the work of the Niagara that I have just described we come along in ore and vein matter to the short break, and we take up another line of workings in ore and vein matter.

Q. In the lime?

A. In the lime. And then there is a break of about 400 feet nearly, 350 feet, on which there is no work; the vein is not prospected through there as yet.

Q. That would be represented approximately in here?

A. That would be in that ground that is shown blank on the map which is just east of post one of the Black Hawk.

Q. Coming on westerly of the place you have already testified to where not covered and where you had the ore on the surface from the quartzite hanging to the quartzite foot, where was the next place where you was able to trace it?

A. There is a place called Utah open cut on the claim marked Sturgis, 62, that has been stoped from the hanging to the foot wall clear across.

Q. Stopeable ore all the way?

A. The ore was stoped all the way from the hanging to the foot.

Q. And there was no lime there?

A. Showing no lime.

Q. Go on?

A. The next is just east of the end line of the Jordan, 64; there

is a great big open stope there that can be seen on the surface and where the ore extended from the hanging to the foot without interruption.

Q. Near the east end of Jordan lot 64?

A. Near the east end of Jordan lot 64.

Q. Go on?

A. Going further westerly about 200 feet, or 250 feet, we strike first class ore practically from the hanging to the foot, right through big stopes.

Q. Now is there any tunnel connection between these ore bodies, extending from the hanging to the foot?

A. There is a diagonal connection between the ore body in what is marked Utah open cut which connects with the section east of the Jordan end line and then there is a further connection running on stopeable ore right to the end of the last section I have described.

Q. All the ore that you have spoken of so far, state whether or not it is within the lime belt?

A. It is only in the lime belt; never out of it.

Q. Go on?

A. Continuing to the west there is a section of country that is almost wholly in ore, passing through the Emma stope from the point marked "Emma" and near the green level that from there to the north, but I will say that owing to the erosion of the
344 hanging wall and porphyry intrusion, also I cannot say that the ore reaches the Upper quartzite; it reaches porphyry which forms the hanging wall of the ore body.

Q. What has become of the quartzite?

A. Probably pushed up by the porphyry when it intruded in between; there has not been enough work done there to determine it accurately.

Q. There is porphyry there?

A. There is porphyry there.

Q. Go on?

A. That is the last place where you can trace on this map ore from the hanging to the foot.

Q. Is there any other map by which you can do it?

A. No map in this case.

Q. Directing your attention to Exhibit T, I wish you would explain to the Court that these openings colored red are intended to represent?

A. The openings that are colored red on that are cuts in the surface from which ore has been taken.

Q. To your own knowledge?

A. I think to my own knowledge in every case.

Q. What is the blue on this map intended to represent?

A. The blue is intended to represent the outcropping of the lode there.

Q. The limestone?

A. The limestone lode.

Q. The yellow coloring here is intended to represent what?

A. Merely intended to represent that there is quartzite at that

particular place; It might have been carried on down further; but we have just indicated it there. The yellow indicates the quartzite and the green indicating the porphyry.

Q. Can you point out to the Court on this map where you have continuous ore?

A. At the surface across the entire belt of limestone through Cut B and Cut A there was ore connecting with Cut C in which is shown a body of lime and from there you go from the foot to the hanging in——

Q. This ore in Cut C reaches the hanging?

A. Reaches the hanging.

Q. And with the exception of a little break between it and Cut B, you then have continuous ore in there to the surface?

A. Yes, sir.

Q. Stopeable ore, marketable ore?

A. Yes, sir; that ore was practically all marketed, the whole of it marketed.

Q. And each one of these spots colored red on the map represents ore coming to the surface?

A. They do.

Q. Can you point out on the 80 foot map to what has been spoken of as the Sampson stope of the Sampson fissure?

345 A. The most easterly end of that is at a point on this map marked elevation 1132.

Q. Near station 213?

A. 214.

Q. Now, I wish you would start at 214 and follow the map as speedily as you can, taking time enough to do it intelligently and explain to the Court how far as you traveled eastward therefrom you can travel northwest of this lime belt in continuous ore?

A. Starting from the point described marked 214, which is the head of the raise known as the Holden raise, we are in a flat ore body which is pitching to the north. We come down on that ore, stoping ore, all the way, to the raise on which we come down vertically, not quite vertical, but nearly vertical ore seam or break to the yellow level below, marked No. 1 West drift on this map.

Q. How far is that level below the ore in what is called the Sampson fissure by the witnesses on the other side?

A. About 65 feet down the raise.

Q. Down that raise you have what?

A. We had ore, quartz, vein matter all the way. When we get down to the level we have ore all the way along the level clear out to its intersection with the No. 1 West drift, marked in yellow.

Q. Go on from there?

A. At that point the ore is pitching under the——

Q. I have not asked you to describe that in detail because the workings are so small?

A. And then we can go right down below that, although the connection not made, a distance of 70 feet. Here both ends come together, going down and coming up until we get into a large body of stoped ore and come out along the red level marked Emma West

drift—it is a continuation of the level marked Emma West drift; come up to a raise 80 feet which comes in to the large body of ore known and the Coolidge stope. Following out the Coolidge stope to a point——

Q. Never mind about the details on this map; speak generally?

A. Come out on ore to the No. 1 West drift, and then further east to the place known as the 90 foot raise.

Q. Explain generally how far you can follow it?

A. We can follow ore with but very slight breaks and interruptions clear to the end of this map where the vein is first shown in this working up here to the point marked 60 foot level.

346 Q. Now how far can you follow it, what we have been speaking of as ore in the Sampson fissure without any interruption at all? How many feet?

A. We can follow it without any interruption. There are certain places where we have ore in one level and practically below, ore in another.

Q. I mean to include in my question going from one level to another?

A. I think we can follow in continuous ore about 3600 feet.

Q. What do each one of these squares represent?

A. 200 feet.

Q. And then you have a break in the portion of the country that you have spoken of already not developed?

A. Not having been developed.

Q. Starting from where the developments commence as you go east how far do you follow on the strike of the belt in uninterrupted ore?

A. About 2500 feet.

Q. More?

A. 2500 feet further, yes.

Q. And the length of that gap of unexplored country is between 300 and 400 feet?

A. Yes; a little less than four hundred feet.

Q. Have you a map upon which of these maps will it be most convenient to you to show clearly the stopeable ore that you have on the strike of the vein, if any, in the lime belt?

A. What section of the lime belt?

Q. Shown in the Kempton workings? Starting from the east end line?

A. On Exhibit S, starting from a point almost vertically under post 2 of the Jordan lot 64, we have a large body of stopeable ore already blocked out; ready to stope but not taken out. Coming along the level known as the Compromise drift, and colored brownish, I take it on this map, any way through the points marked Compromise drift, we pass along that level in a large body of stoping ore, we come to the Compromise stope and stope which has been worked and which had a large body of workable ore, then up from the Graves stope, another large stope.

Q. Those connect?

A. They are connected.

Q. In ore?

A. In shiping ore. And thence up to where it is shown here, its connection with the Mill tunnel colored red. That is all ore, and all ore along the Mill tunnel.

Q. From what point to what point?

A. At about station 268. From the connection shown between the Graves stope and the Mill tunnel through station 258.

Q. Does the Graves stope connect with the Mill tunnel?

347 A. It is actually connecting on ore.

Q. About how far from the mouth of the Mill tunnel?

A. About 40 feet.

Q. Then take up the Mill tunnel and following it?

A. Taking up the Mill tunnel we have ore, that is a continuation of the ore from the Graves stope on past station 268 all along the drift to a cross cut to the south into the Foot wall drift. That is all ore there to the Foot wall which is in ore soped ore, ore blocked out ready for shipping, and stoping, and thence on over right on the quartzite.

Q. That stope is marked foot wall drift.

A. Marked Footwall drift; thence out through the square sets to the red level through station 270 and up through elevation point 923.3 to an uncolored level there; on through the uncolored level and into the square sets marked Jones stope, all in ore, the ore being still there.

Q. What do these square sets represent?

A. The black squares represent the square sets of the stope where we have extracted the ore.

Q. Go on from the Jones stope?

A. Then on through the Jones stope into the Lions Den stope, one of the largest and richest we ever had and up to a stope marked Little Iron stope—they are different names given to different ore bodies for working purposes only; for convenience in working we had various names for them. Out through the red level at elevation points 914, 10, 15, through here, passing down the Downey stope not marked but indicated by an outline there to elevation point 918.6 and 915.3 and thence under the red level and past 565, 575, 632, 633. That is one of the great big ore bodies blocked out ready to be worked but not yet worked.

Q. That is shown by what other level than the red level?

A. It is also shown in the Drain tunnel below, colored green at stations 53 and 54 and other stations nearer.

Q. You have ore in both levels?

A. We have ore, a large ore body extending way out on this red level, these red workings through here.

Q. Go on?

A. Thence on through the Big Iron stope, which is an ore body about 85 feet thick. That was worked out some years ago; on through the Big Iron stope as marked on this map then up the Ivy stope.

On continuous shipping ore; I don't think less than 30 feet thick; then on up to the end of the Ivy stope, shown at this point;

thence on through a region shown here in hatched lines indicating winzes and known as the Godsworthy stope.

Q. Give some station near it?

348 A. Near elevation point 983.3, 952.4; stations 6, 8, 4-a and 5.

Q. Where the series of hatched line workings are?

A. Yes, sir.

Q. What are they through?

A. All ore. And then on down what we call the Goldsworthy raise in ore, stoping ore all the way down to the Red level, at station 2, elevation 913, 910 on out there, in ore all the way, the ore bodies being all unworked and unstoped yet; and we come to a raise indicated here by elevation point 943.4, stations 8, 4 and then up into one of the largest stopes in Bingham, called the Big Emma stope. It is still open and you can go through it. Then on across to a raise indicated here by station point 967.3 or station 12 coming up that in ore all the way from that Robbie stope to the yellow level; thence along the yellow level to station 507, in ore all the way,—a large ore body there. Thence out along the level by stations 508, 509 in ore. Then we come on to station 755, into a cross cut back into the ore, the level at that point passing under the ore passing around this way as you go in. The ore body lies back of it. Then through the yellow level, by stations 720, 719, 718, 703, 721, and 23 on up.

Q. What did you find there?

A. A big ore body. 30 feet thick one of the best stopes we have in the mine. Then to elevation point 1038.4.

Q. What is that?

A. That is an incline we are just prospecting the ore body running around by stations 761, 1021, by the No. 1 raise, head of No. 1 raise, stations 709, 791 to a point where there is no station given, but the elevation is 1021.9 to a little further beyond that where the ore body plays out.

Q. Now in what direction is the ore body that you have in this part of the level from station 761 on to 954, in what direction is the ore body there dipping?

A. It is dipping to the south.

Q. Dipping this way?

A. That way, yes (indicating).

Q. It is encountered in this level opposite?

A. No, sir; the level runs right over it.

Q. It is some level run between stations 569 and 566?

A. The ore body itself is not encountered there in that level.

Q. Did you find the ore body in another branch on that same level out to the south of where you had it here at station 791?

A. I find an ore body at station 637.

Q. Point to that?

A. An ore body at 637.

Q. In what way is that ore body dipping?

A. Dipping to the north.

Q. So that you have it here dipping to the south and there dipping to the north?

A. Yes, sir.

349 (By Mr. HILES:)

Q. How far west is the point that it dips to the south from the north?

A. It is almost directly south of it quite a distance, a hundred feet.

Q. Approximately?

A. Approximately.

Q. Now the No. 1 level cuts what workings?

A. That cuts the Emma west, or at least the northern branch of the Emma west drift the No. 1 level, Coolidge stope on the No. 1 level and the Emma west drift.

Q. That No. 1 raise is through what?

A. Ore; stoping ore all the way.

Q. Is there an ore body which you pass at station 791?

A. That is called the Coolidge stope.

Q. Have you indicated that on any other map so that we can get any idea of it?

A. I have had these unworked ore bodies indicated on map marked KK.

Q. Now point out there to what is the Coolidge stope that you spoke of having along this level here?

A. The Coolidge stope runs from station 509 westerly clear out to the point marked 637 and is indicated by a large block of red square sets.

Q. That ore has not yet actually been stoped, I understand?

A. Not been stoped but it has been penetrated by workings to determine its length and dimensions generally. It may be larger than shown. As far as our workings go they indicate from the size we have blocked out here that it would make a distance of about three hundred feet long by a hundred feet wide.

Q. You have it in the No. 1 level as shown on this Exhibit K K?

A. Yes, sir; a little southwesterly of station 694. It would be indicated by that point in the raise.

Q. And you have it in the Coolidge cross cut?

A. Yes.

Q. That is here?

A. That is here in the raise. We follow along in the drift in ore all the way.

Q. And this is the same raise you spoke of on the other map?

A. That is marked No. 1 raise.

Q. On the other map, No. 1, raise?

A. Yes, sir; on that same level from station 554 to 636.

Q. The one that you spoke of that lies over the ore body?

A. Yes, sir; lies over the ore body; the ore underneath.

Q. How do you know that?

A. It is indicated in No. 1 raise on that map and on Exhibit S it is marked No. 1 raise and extends from the Collidge drift down to the Emma West drift in ore all the way.

350 Q. On the line of work here in which you find stations?

A. In stations 838, 24, 23, 20.

Q. Is that what you call the north branch of the Emma West on this Exhibit S?

A. Yes.

Q. And that Emma West drift as shown on Exhibit KK is in what?

A. That is driven in the ore body and developing ore and the ore is very fair.

Q. All the way?

A. All the way; continuous ore.

Q. Do you know that it is as wide as shown back to the northerly limit of it?

A. I know that to be the size from knowledge of my own; we expect it is larger, but that is the definite information that we have of its size.

Q. Now going from the southwesterly corner of the Coolidge stope at or near station 846, going on thence to the workings here marked lower stope and upper stope to Holden raise, tell us what you have?

A. We have ore arriving at station 847; we have ore going down near station 637.

Q. Point that out?

A. We have ore along the yellow drift all the way to the bottom of that raise marked Holden raise; we had ore all the way up the raise and then up into the stope marked Holden raise, a drift from it marked F-3, 956 and 1132.4.

Q. Ore all the way?

A. All the way there was good ore.

Q. When were you last there Mr. Holden?

A. I was there several weeks ago.

Q. Last?

A. Yes, sir.

Q. When you were last there how many feet did the head of that raise lack of making connection with the stopes that you were speaking of as the stopes in the Sampson fissure?

A. About 40 feet on the incline.

Q. Whether that connection is now made or not, you have not personal knowledge; only hearsay?

A. Only hearsay; no personal knowledge. I directed it to be made.

Q. And then you have ore continuously out into these ore bodies in dispute?

A. You can follow ore then from that and there is ore going down in the Sampson and there was ore coming up in the Holden raise and from there clear on out all the way.

Q. Now the square sets easterly of the Coolidge stope; is that also in what is called the Coolidge stope?

A. No; we do not call that the Coolidge stope; that is called the Excelsior ore body; this we called the Coolidge ore body, and it is another case where it is convenient to have another name.

351 Q. Do you know of ore that is as extensive northerly and southerly and easterly and westerly as represented by these square sets?

A. Yes, sir; more extensive I say of course over here where it is not colored.

Q. And commencing back here of the square sets in black, can you show on Exhibit S where that connection is?

A. That connection would be near to the Big Emma stope in the northwest corner near red station 12 and elevation 967.3.

Q. And from there this map shows the square sets where they occur?

A. That map shows square sets for all ore already taken out; it does not show square sets there of ore that is still there ready to be taken out by stoping.

Q. Is all that ore that you have been following easterly and westerly and through these stopes that you have spoken of within the lime or its part of it outside of the lime?

A. Wholly in the lime belt, in the lode.

Q. It is bounded as you have before stated?

A. It is bounded always by the quartzite on the foot wall and nearly always with the quartzite on the hanging, with porphyry here and there.

Q. There is one feature I wish to ask you about generally, and that is whether running easterly and westerly through this limestone belt you find any roll or curve in the beds in the direction of their dip?

A. Clear from the Telegraph, through the Niagara and all the way through this property as far as development goes to show, we have the roll where the beds in the formation come down and then turn up. The roll varies locally. In some places with the pitch of the beds and then appears on the section as nearly horizontal and again raising up; and again going east or west on that roll it is higher at points.

Q. Wave like in appearance?

A. Yes, sir.

Q. Speaking generally how many points have you discovered and developed that roll in the beds?

A. Why, nearly from one end of the property to the other; it runs right through the Old Telegraph, Jordan and Niagara which constitute a part of the property of the United States Mining Company.

Q. Have you a cross section showing a place in that roll very pronounced?

A. I have. In section No. 1, which is a section on the end line of the Jordan, Exhibit JJ, we have the roll indicated by the yellow shading which is put on to represent the quartzite.

Q. The quartzite foot wall?

352 A. The quartzite foot wall. That is a cross section taken through there. There are works vertically through there which give us the position of the roll on the foot wall. There can be no reasonable question of it. On Section 2, the roll is again shown where we had a chance to work it out. Section 3 does not go down far enough to meet the roll.

Q. Now I will ask you if you are familiar with another system of fissures other than those you have spoken of, which are confined to the limestone which cross the country in a general northerly and southerly direction?

A. There is a system of fissures which we know run out north and south; they are substantially parallel, and were formed after the great——

Q. Name them first commencing at the westerly end?

A. Commencing at the westerly end on the limits of the 80 foot map and shown here is the Ashland, the Galena, the Live Pine, Condor, Bully Boy, Silver Shield, and Giant Chief.

Q. Could you indicate those on the 80 foot map? in their order?

A. Commencing with the Ashland, the Ashland fissure is about through the region that I hold my pointer, which is through the square marked 180 and up through the point of the letters 180 in one of the squares in black, and on up passes 231 square to the north in black. The next fissure is 179—I did not get the right number.

Q. That is the Ashland?

A. Yes, sir. Then we have the Galena fissure running as this long line of works show.

Q. Anything between the Ashland and Galena fissures?

A. We have nó other fissure that I know of that extends into the quartzite; there is none I think.

Q. What about the Sampson fissure?

A. Oh, that is confined wholly within the lime and does not extend in either the foot or hanging quartzite. I carefully examined them to determine that; I examined every feature around there and looked very carefully; and there are many evidences that that does not extend either into the hanging or foot wall of quartzite.

Q. State what the evidences are, if there are any evidences to show that the Sampson fissures does not extend into the overlying or underlying quartzite; what are they?

A. The first evidence would be if we take the line of the Sampson fissures as shown underground it must necessarily cross within the lower Ashland tunnel and it does not cross there, if it preserved its course. That is proof that it does not go into the foot wall.

353 The hanging wall is exposed for several hundred feet of bare quartzite, with no wash on it and very little vegetation, and the Ashland fissure which can be traced across it, but you cannot find the Sampson fissure to the north.

Q. Now I call your attention to No. 1 West drift marked here on the 80 foot map for a distance there easterly and westerly seven or eight hundred feet, and ask you if in that level you find any evidences of the Sampson fissure?

A. That level is in the lime, in the lode lime and there is a break coming down along that; that might be one of the breaks of the Sampson fissure.

Q. Now what evidence have you or what examination have you made to determine whether or not the Sampson fissure extends into the foot wall prophyry?

A. I have explained that by the tunnel. I could also say that where it ought to cross through the roll we cannot find it.

Q. Then come on to the next north and south fissure which you recognize passes through the country generally?

A. We have the Galena fissure.

Q. That you have spoken of.

A. The next is known as the Live Pine fissure, which is parallel to the Galena or substantially so, and passes north and south faulting the bed.

Q. Go on?

A. The next fissure is the Condor fissure indicated by a line at this point on the tunnel level but not lettered. It would pass from a point through the working marked Tracing stope and near elevation 865, 910 and elevation 878; that is called the Tunnel level.

Q. That passes into the underlying and overlying quartzite?

A. Yes, sir. The Silver Shield is the next one to the east that is developed. There are some others, may be in the country but are not shown. That is true of the Niagara working. The Silver Shield passed through and we know it and can detect it in the lime, in the lode. It is difficult to detect these fissures, as a rule where they pass through a big bedded vein but we know that fissure in the quartzite foot wall and in the porphyry which is still below the quartzite foot wall.

Q. What do you find after you pass over and through the lime belt to the north into the hanging country?

A. The fissure probably extends there but it has not been identified yet; it runs probably into the porphyry country but no work has been done to identify it. We know it in that work however. The next one is the Giant Chief fissure which we know in the western workings from the discovery, which passes out into the foot
354 wall of quartzite to the south: It has not been developed to the north.

Q. About where would it be on the map?

A. That would be along through nearly on the line of the level running north and south from the Roman Empire tunnel.

Q. And colored yellow?

A. In that vicinity. Colored yellow.

Q. As you go east from that have you any more fissures of this kind?

A. There have been no known fissures ever detected in there either in the Hanging or foot.

Q. What evidences are there that these north and south fissures were later than the mineralization of what you call the vein or lime belt?

A. There are several evidences of it. First we find porphyry faulting the big bedded vein.

Q. Turn to any map where you can show that most clearly to the Court and point it out?

A. There is no map that will show both sides of the fault but on this 80 foot map marked Exhibit BB through a line of works which would be nearly at the end of the Fairview claim, at posts 1 and 2, the vein terminates abruptly against the porphyry, and the next we find of the lode it is thrown to the north.

Q. How far?

A. Well, at a distance of probably seven or eight hundred feet.

Q. And then you take it up?

A. And then we take up the lodes and it goes on for some thousand feet to the north.

Q. Now I wish you would state so that there may be before the Court all the evidences that you have of the limestone belt you take up there is the same one that you had here?

A. We have two well defined belts which come for three miles from the east—they can be traced on the surface.

Q. Well defined belts of what?

A. Limestone beds, that we follow up clear to where they break at the porphyry. Then in searching the country to the west in a direct line we find no evidence of these beds being in a direct line nor to the south, but going to the north with this throw of about 800 feet we find beds which correspond in thickness and position with these two beds we have here.

Q. How as to the distance apart?

A. They preserve their distances apart and they preserve the same mineralization and the same general structure and the same occurrences of ore.

355 Q. So as a matter of fact if the country had been thrown to the north for the distance you have stated, state whether these alternating beds of quartzite and lime which you have running easterly through the porphyry would be in their relative positions when you find them going to this point northwest?

A. They are in their relative position.

Q. Now how much developed country have you from the last and most easterly of the north and south fissures you have spoken of any place in the lime where there is no north and south fissures?

A. About 2200 feet.

Q. That 2200 feet is not cut by any north and south fissure?

A. Not a north and south fissure that is known.

Q. How does the vein which we call the vein for that 2200 feet correspond in richness and extent of mineral deposition with the portion of the same vein where it is cut by north and south fissures?

A. The Telegraph mine is better developed and apparently all through that region not only richer but larger ore bodies than in any other section. That it is the richest is possibly due to the fact that there is not so much work done elsewhere, but in that section it is the richest portion of the vein.

Q. The question that you were about to explain was the faulting of the bed vein or lime belt by these north and south fissures.

A. We find the north and south fissures, those that I have mentioned faulting the vein moving it as a rule as you go east or west, I should say, going from the east to the west, that each section is a little lower as if you were trying to follow the foot wall on the same level when you come to one of these faults, you would have to turn to the left, giving a step like appearance as you go along.

Q. And down?

A. And down. That is almost the universal rule—not quite. Then we find that the lode itself, faulting. We also find the ore——

Q. You go too fast. How many places did you find this faulting as you follow along the foot wall on the line of these north and south fissures?

A. We have it within what we——
Q. Anywhere that you find it?
A. We have one shown in the Telegraph.
Q. In the Giant Chief?
A. In the Giant Chief, one shown on the Condor & Silver Shield.
Q. What is the extent of the fault here on the Giant Chief?
A. It is probably 200 feet, or 250 or so.
Q. Now which is the next one in which you find the fault in the foot wall?
356 A. We find a fault in the foot wall on the Silver Shield.
Q. That is in the neighborhood of where I hold my ruler?
A. In the neighborhood of where you hold your ruler.
Q. What is the extent of the fault there?
A. It is not thoroughly determined but it is probably 30 or 40 feet; not work enough done to thoroughly determine it.
Q. While the extent has not been measured and cannot now be determined, is the evidence of the fault there to be seen?
A. Yes, the evidence is to be seen.
Q. The only thing undetermined is the extent?
A. Its extent.
Q. Is that on the plane of the north and south fissure?
A. Yes that would be on the plane of the north and south fissure.
Q. Now the next one?
A. Would be the Condor fissure which I have described.
A. That is about here?
A. The throw there is about 12 feet and shown clearly in the level called the Compromise level.
Q. The next one where you have the fault and on the plane of fissure?
A. The next one would be the Live Pine fissure and that also shows a fault on the foot wall and can be measured.
Q. How much?
A. My recollection of that is it is about 40 feet.
Q. The next one?
A. The next one is on the Galena fissure and on account of the large mass of works near there you cannot measure it on the foot wall of the Jordan lode, but it can be measured by a bed underneath in the Galena fissure, and it is about 90 feet horizontal and probably 40 feet in a direct line of the throw.
Q. The next one?
A. We come to the Ashland fissure.
Q. What have you there?
A. We have faulting there shown in the Ashland tunnel of a distance not over eight feet but it is a fault.
Q. Is the ore body faulted?
A. The ore body faulted.
Q. Which ore body is faulted; take some of these maps and show it?
A. On Exhibit R, the first drift to the right colored yellow shows the ore body going to the right, that is going west and then the next going through the ore body indicated here near station 971 running westerly or southwesterly you can see the other side of the throw.

Q. Can you sketch that quickly on a piece of paper?

The COURT: I think I understand that perfectly.

Q. Have you any opinion Mr. Holden as to what was the cause of the great throw of this vein that you spoke of, the throw of several hundred feet or so to the north?

357 A. It is indicated at least that it was probably caused by the porphyry pushing its way up.

Q. Is that where the vein comes out against the porphyry here?

A. As you go from the Jordan east end line west you encounter porphyry.

Q. What are the dimensions generally of the porphyry that you have there?

A. The porphyry is very great.

Q. Give an idea of its length?

A. It may be a mile back here to the south; it is a huge intrusion evidently of the porphyry.

Q. How far northerly and southerly is its width?

A. Northerly and southerly it is a mile in some directions there but not at this point.

Q. An enormous eruption?

A. An enormous eruption of porphyry.

Q. Now is there anything to indicate that the porphyry which faulted this vein was earlier or later than these north and south fissures?

A. It was earlier than the north and south fissures because the north and south fissures, these breaks that I have been speaking of in every case faulted or cut the porphyry; they cut into the porphyry.

Q. They cut the porphyry?

A. They cut the porphyry.

Q. Showing that the faulting was later than the porphyry?

A. Yes; that would be conclusive.

Q. Now going beyond that portion of the vein if you have taken it up on the throw north and going west, have you examined that part of it in any other mine?

A. I have.

Q. What mine?

A. In the Stewart No. 1, which is a part of the Boston Consolidated and in the Highland Boy the next adjacent mine to it.

Q. State whether or not anywhere in the Stewart No. 1 you have undertaken to trace the ore from the quartzite foot wall to the quartzite hanging wall?

A. In the Stewart No. 1, the ore extends or did extend from the quartzite foot to the quartzite hanging wall.

Q. You know that from your personal knowledge?

A. I do.

Q. From personal observation?

A. Yes.

Q. If that vein had not been thrown about how far west of the Kempton workings marked here on this 80 foot plat, as shown to be

the Kempton lower tunnel, if the vein had not been faulted about how far west of this Kempton tunnel would be the place in the Stewart No. 1 mine where you would find the ore, going from the quartzite foot wall to the quartzite hanging wall?

A. About 800 feet.

358 Q. How far west would it be of the Ashland tunnel, about?

A. About 200 feet or a little more.

Q. A little over 200 feet. I direct your attention to Exhibit R and to the line of workings marked Neptune and Kempton lower tunnel; have you been through that tunnel?

A. I have.

Q. And in all its branches?

A. I have.

Q. What does that tunnel start in on at its mouth?

A. The tunnel starts in quartzite.

Q. And how far in do you go before you encounter the contact between quartzite and lime if at all?

A. About 180 feet.

Q. On that line of contact between the quartzite and the lime what have you?

A. We have ore.

Q. How near to the contact?

A. Right on the contact.

Q. What width or dimensions of ore?

A. About 4 feet of ore there.

Q. Have you had samples of it taken for essay?

A. I have.

Q. And they will be produced?

A. They will be produced.

Q. What working is there in that ore that you encounter in the Kempton tunnel on the plane of contact?

A. There is a drift running east about 20 feet.

Q. Is it indicated on this?

A. It is indicated on Exhibit R near station 18.4 C.

Q. At this point?

A. Yes.

Q. What did you say about a raise?

A. There is a raise goes back on the contact to the south from station 418 c and runs up there 25 or 30 feet in ore.

Q. In ore?

A. In ore.

Q. Then passing that body of ore that you have on the plane of contact give the distance as you travel along the tunnel in a northerly direction to where you intercept if at all, other bodies of ore?

A. We have indicated this on section 4.

Q. You have verified that section have you?

A. Yes; the section was made under my direction, Mr. Tyler's and my direction that section showing the ore seam in there (Exhibit HH).

Q. Now where is the one you have already described?

A. It is shown about 180 feet from the mouth of the tunnel in the raise the ore body is shown.

Q. Now take up the next one?

A. A short distance beyond that.

Q. About how many feet?

A. I don't know exactly.

Q. You give them in their order and I will point them out on the map?

359 A. In this tracing they were accidentally omitted in putting them on; I thought I had them there. 37 feet from there, from the contact is No. 2 seam.

Q What is it? Seam of what?

A. It is a seam of ore; there is ore in it.

Q. Merchantable ore?

A. No; there is not so much merchantable ore there but it will assay; a seam of mineralized matter which can be followed.

Q. Is the first merchantable ore?

A. Yes, sir; the first is merchantable ore.

Q. An essay of the second will be given?

A. Yes, sir. The next one 25 feet further, No. 3.

Q. What is the width of that?

A. The width there is about two and one half feet as I recollect it; a little drift indicated upon the map on that Exhibit R at station 418 b, there is a drift to the left indicating where the little ore body passes out.

Q. You don't say what that is, what kind of material; what is the material?

A. There is ore in that; we had samples of them and we will have the assays of all of them produced.

Q. The assay will indicate from which one?

A. It will indicate from which one taken. The next one is 57 feet further.

Q. Give the dimensions as you go along?

A. It is a seam of about a foot, a little over in thickness. The next seam is 12 feet from there and that is a seam a few inches wide. The next one is 17 feet from there and another one just a few inches in width. The next one, which would be No. 7, 34 feet, and that is just a few inches. No. 8 is about 16 feet further and that is six inches or so. The next one is about 20 feet and that would be No. 9, also six or eight inches. The next one is 22 feet further and that is also a few inches. And then seven feet further is another one which would be—and then five feet beyond that is still another one and ten feet beyond that is another one, and then we come to No. 14. These are numbered consecutively, and ten feet beyond that is another one quite a wide one, three or four feet; and 25 feet further is another one and then we come to the Sampson.

Q. Which is there?

A. Which is indicated at that point on that section.

Q. Each one of these places you have spoken of contain ore.

A. Each one of them contains ore of some value; they are not all merchantable ore at all.

360 Q. I wish you would explain while you are here, this cross section.

A. This section only represents and is intended and does only represent the workings and features along this line of section the workings being represented in black.

Q. Describe the workings?

A. It is taken on the line marked Section 4, which runs through the Mountain Gem, Jordan, Kempton, Ashland, Fairview and so on. It is a projection in part that is supposed to be within 50 feet of the line and I think there is nothing put in that is outside of a line of 50 feet.

Q. You call out the workings on this section and state in what direction they have been projected and I will point to them here?

A. Starting at the mouth of the Neptune tunnel, the Neptune tunnel has been projected, put over on the line of section from where I will show it, along through its entire length to where it intersects the workings known as the Sampson fault. The plane of the section actually cuts the Neptune tunnel, about two thirds of the way in on the line of section.

Q. And this northerly part has been projected to the east?

A. Yes to the east.

Q. The southerly part to the west?

A. Yes, sir. The line of section also connects the green level known as the Kempton upper level colored on Exhibit S.

Q. Where was the one that you were speaking of here?

A. This is the Neptune lower tunnel. Now the upper tunnel, the section line follows almost along the level with very slight projection, I should say 15 or 20 feet at the outside is the greatest projection of it, and it passes through stopes and raises or winzes and through ore bodies that are indicated on this map down across the Sampson level.

Q. Where is the Sampson level?

A. Down here.

Q. On the main tunnel level?

A. Main tunnel level.

Q. What is this level here?

A. Station 346, it is what they call on the map the Turnsheet level and which we call the No. 2 level colored brick red on our map.

Q. How far has the Turnsheet been projected to this section?

A. About 20 feet.

Q. In what direction?

A. Projected east on to the section.

Q. And the ore body which is shown on this Section HH lying between the level in which is found station 545, down K. K. lower tunnel, is what ore body?

A. It is an ore body or two ore bodies in this lode which have been designated here; it is partly what they designate as Kempton vein and partly Sampson.

Q. How far has it been projected and in what direction?

361 A. Well that section that you are pointing at is almost an exact section.

Q. Very little projection?

A. Very little projection.

Q. It is close to the ore body?

A. Yes, sir.

Q. And then this working marked on cross section HH and marked on KK also; what is that?

A. That is a section line on the Neptune and Kempton lower level; it comes back to the north away from the section line too far for projection to the section and the section line again connects the workings near Section 961 or 1172.7. It actually cuts that and cuts the ore body.

Q. That has not been projected at all.

Q. Station No. 1 on cross cut? Where is that working upon the horizontal map?

A. It is shown colored yellow, No. 1 level and cuts the section line, cuts the level.

Q. Any projection there?

A. The projection is marked white on that map and the sections of ore are hatched.

Q. There is a body of ore represented there?

A. This cuts a large body of ore, the section line actually cuts it, which have been developed ready for stoping and taking out.

Q. How near to the foot wall quartzite does that ore body come?

A. That comes right down on the foot wall quartzite.

Q. The yellow on the cross sections is inetnded to represent the foot wall?

A. Approximately that is the foot wall.

Q. How near does the ore represented on this section come to the hanging wall?

A. The ore goes right to the hanging wall or very close to it, at least in the upper Neptune Kempton tunnel level.

Q. Now take the other sections and we will get through this matter once for all. Coming now to Exhibit JJ, I call your attention to Section No. 1 on that Exhibit JJ and ask you to point out on the horizontal map where that line of section is taken?

A. Section No. 1 is taken right through the end line of the Jordan.

Q. The east end line?

A. The east end line of the Jordan.

Q. Just explain it?

A. The section line actually cuts a drift which is elevation 887.5 in ore; it cuts the Corner cut, touches the corner cut, but not marked on this map. It is at elevation 888 2/3; and then through the Tracing stope, through the Compromise drift, also the green level marked Utah tunnel and then on out to the working where the green level touches or develops the ore body way over the roll is projected a distance of about 20 feet to the west to bring it on the section.

362 Q. Now where is the Bemis tunnel or stope?

A. That I omitted. It is colored red.

Q. How far has it been projected?

A. About 15 or 20 feet.

Q. In what direction?

A. Projected east, and the ore body at the end of it is shown on this exhibit. That is projected right near the end. It is an ore body there stoped out.

Q. Does it lie with reference to the hanging quartzite as shown by this exhibit?

A. Approximately.

Q. As is shown here?

A. Yes, sir; and my recollection would be that it even extended up further; it really went to the quartzite.

Q. On this section is marked here Tracing stope? Where is that on the horizontal map?

A. That is projected, I think I am not sure whether that is within the 50 feet. I think may be a little of it is projected further.

Q. In what way projected?

A. It would be projected east on to the section line.

Q. When you refer to any point on the section map, give the station number?

A. Then the Compromise drift; the section line actually cuts that.

Q. The ore body lying above the Compromise drift on this section had been projected how far and in what direction?

A. Well that is a great big ore body. I shall have to look at that section to refresh my recollection. The Compromise level drive as marked shows ore and it is a big ore body that is now developed thirty or forty feet thick and the Tracing stope passes directly over it. I should say there is a projection of about 50 feet at the extreme point but most of the section line is directly through the Tracing stope.

Q. I see here marked on the section Utah stopes?

A. Those have been projected about 30 feet.

Q. How near to the foot wall did that go?

A. Right on to the quartzite.

Q. Here is a pires of ore on station 860 and marked projected 150 feet; where is that?

A. That ore body is right over near the top of the roll and goes up to the top of the roll; that was carried 150 feet.

Q. In what direction?

A. That was projected east from a point where elevation 882 is or station 145.

Q. So if this line of section were taken 150 feet further west than it has been, it would show ore body precisely as shown by this section, would it?

A. It would.

363 Q. And then there is a line of work and level marked on this section First Right drift Drain?

A. That is indicated by station 40, elevation 831.4, 833.9 colored green.

Q. And marked here as having been projected 70 feet; in what direction?

A. I should not think that was the distance, 70 feet. That

carries the ore body further back. There is a portion of the ore body that is within ten feet of the section line; the furtherest point to the south, station 37 is 70 or 80 feet. It is a large ore body there and could be carried much further by projecting further.

Q. Where this plane of section cuts through do you have any quartzite that is discoverable?

A. Yes.

Q. The foot quartzite?

A. Yes.

Q. Between these points where it has not been actually cut by the workings it has been found?

A. Yes,——

Q. Now coming to section 2 on this map, Exhibit JJ, point to the Mill level?

A. The Mill level cuts the section at station 268.

Q. The ore body in and around the mill level marked here Graves stope, and at the top projected 30 feet, and in which is found elevation 928, how far has that ore body or any part of it been projected to this?

A. Not to exceed 50 feet; a large body of ore developed by upraise workings.

Q. How does it lie with reference to the foot wall of quartzite?

A. Lies on the foot wall of quartzite.

Q. As shown by this section?

A. As shown by this section.

Q. And then the Chert tunnel the ore body above that?

A. That connected with a large open cut.

Q. At the surface?

A. At the surface. I have indicated the quartzite proceeding to the north.

Q. The stations on each of these sections correspond with the sections on the other map?

A. Yes; they do.

Q. How far has the Piper stope been projected?

A. We come right through the Piper stope.

Q. No projection there?

A. I think there is no projection there.

Q. And the stope running down apparently from the Compromise drift to the Jordan incline?

A. That is another stope that has not been projected but is cut by the section.

Q. And then another stope on to the north of that as shown in this section in to which two raises apparently go; how far is that Projected?

A. That is projected about——

364 Q. How does it lie with reference to the foot wall of quartzite?

A. It is nearly to the foot wall of quartzite, one end being directly upon it.

Q. And then I see what is marked 400 incline going down? Is there ore in that incline?

A. Yes; in that incline.
Q. Lying how with reference to the foot wall?
A. Right on the foot wall; we drove the incline right on the foot wall.
Q. I will ask you to point to the Flag tunnel on the same exhibit?
A. The Flag tunnel?
Q. On the horizontal map?
A. Yes, sir.
Q. Is there ore connected with that?
A. There is a large stope there which goes to the surface, the section cuts it?
Q. How does it lie with reference to the foot wall of quartzite?
A. Right on the foot wall of quartzite.
Q. And then on beyond going northerly is another ore body in which we find top elevation 970 and bottom 270; How has that been projected?
A. We cut right through the Jones stope; we called it the Jones stope; it is through a great big stoped country that the section line actually passes.
Q. Is it the Museum stope?
A. Museum stope; that is projected about 50 feet.
Q. What direction?
A. East. The Jones stope is cut by the section and the Lower Ions Den is cut by the section.
Q. The Piper stope?
A. That is projected west 20 feet or more.
Q. The Downey stope?
A. The Downey stope is about 5 feet from the section, projected to the east.
Q. What does this lower level represent on the section; what is the name of that?
A. That is a drift in square sets.
Q. In ore?
A. That is in ore. There is another stope one part going up vertically and another horizontally. That is really one stope but has various ways of connecting it, one coming vertically from the Drain tunnel, colored green on the map.
Q. Is it all within the general limits of the projection of the map?
A. Yes, sir; it is wholly within the limits of the projection.
Q. How does the ore found in the mine lie as represented on this section No. 3, lie with reference to the quartzite hanging wall? As shown by this section?
A. It does.
365 Q. Now taking this surface map Exhibit T again. I call your attention to some surface work here on this exhibit T, which apparently is some surface work or a portion of the same surface work that was represented upon the defendant's map? Is that so?
A. It is.
Q. I call your attention to the easterly part of that tracing work to where it connects with the work running in a northerly and south-

erly direction and at the northerly edge being elevation 1338.5; what do you have in that northerly and southerly?

A. The north and south fractures filled with matter showing Oxidized iron.

Q. How does it compare with what you have in that part of the tracing done by defendants in which is found elevation 1342.5?

A. It is the same material.

Q. What do you have in the little working and drift running off apparently to the southeasterly at elevation 1312 and near station 43; what is that?

A. There is a drift connects with the shaft there showing at the far end this same oxidized iron.

Q. In the working marked Corner incline; what have you?

A. A body of ore there.

Q. What kind of ore?

A. There is shipping ore there.

Q. How near to the surface?

A. Practically right to the surface.

Q. Can you give the distance between that and this northerly tracing that you have been testifying about?

A. It is less than thirty feet.

Q. Then I invite your attention to apparently an open cut on top of the Jackson incline; what is that cut in?

A. That is a cut into the lode lime and there is oxide of iron all through it, scattered all over it and all through it.

Q. Can you say whether or not it is the heavier or lighter iron?

A. That looks like pretty good iron. It is all through the cut is running from here to there.

Q. And then there is another apparently surface opening near station 419 on this Exhibit; what is that in?

A. That is in ore; there was ore coming through that.

Q. What is the name of this incline that goes from that point down?

A. That is the Rip Van Winkle incline; it passes through station 420 and 421.

Q. What is that incline in?

A. In ore from top to bottom.

Q. From the surface down?

A. From the surface down, good ore, stoping ore.

Q. Near station 20 it has been stoped.

366 A. Yes; has been stoped I have stoped a good deal of ore from that.

Q. And the lower one?

A. I made that stope too.

Q. Now is this surface opening near station 1?

A. It is.

Q. St. 1?

A. Yes, sir.

Q. What is that in?

A. There is ore in that, unmistakably ore; no question of it.

Q. And there is ore still?

A. Still ore there.
Q. There is an incline running down from it?
A. Yes; there is.
Q. What is in that?
A. Ore in that.
Q. We come to St. 4 and S. 5 where there is a drift?
A. Yes, sir.
Q. What have you at the surface in these cuts?
A. S. 4 there is ore; there is no ore in S. 5. That is a mistake in coloring. It should not be colored.
Q. At S. 4 however, there is ore?
A. Yes, sir.
Q. There is a little incline running down from that?
A. Yes; a little incline running down and ore in the incline.
Q. These other large bodies you have already spoken about; at S 7 there is an open cut?
A. Yes; there was ore there.
Q. And in the incline running from it what have you?
A. There was ore in that incline.
Q. At S 22 in that cut, what was there?
A. There was what is called the Mountain Gem incline and there was this oxide of iron there; there was a little ore. I tried to work it once.
Q. From your experience in mining and development work in this lime belt I wish you would try to explain in a general way how abruptly the ore is cut off in the lime and how you find the ore bodies in the lime bed; what is your system of development to find them?
A. The ore cuts off in this lime bed almost abruptly; I do not mean by being faulted, but that the action of replacing the lime and making of the ore body went for some reason into a certain place and then stopped without any warning. We run a drift within six inches and even—perhaps I can explain it better if I take the case of the richest ore body ever found in Bingham; the limestone country lay in between two branches as shown on May 8 of the Mill country; the right branch of the Mill tunnel was driven with two feet of an ore body from which I took two million of dollars.
Q. Did you encounter it in the right branch?
A. Within two feet of it.
Q. Did you get it?
A. We did not get it; we did not even discover it; that branch was driven right on and had been run by there for some 20
367 years before we finally discovered it. And then we found that the left branch was driven also by it without finding it although the ore body had touched it, afterwards we found that the ties under the track had been put upon one corner of the ore body but it was not discovered then.
Q. And for how long before you discovered it?
A. 20 years before we found it.
Q. You were within that short distance?
A. We were within that short distance.
Q. Did the ore extend above and below the level?

A. Yes, sir; it went down under the level and wormed around through there. When I took charge of the mine first, you could not see any signs of ore around where this great mass of ore is; it looked like just quartz and vein matter but not pay ore, and then afterward we found this big ore body.

Q. Can you refer us to any places—I do not want you to go through all of them,—a few places, one or two, where you have found any ore body which was apparently disconnected with another, and afterwards proved to be connected in ore with another body?

A. We have found many of these.

Q. Give us one or two?

A. Yes. The Lions Den, when we found it it was not connected with anything; afterwards in working around we connected with it right around in other directions. In the same way take this Big Coolidge stope and by referring to the map you will find that is illustrated.

Q. Explain how the Coolidge stope was discovered?

A. We drive the No. 1 West drift colored yellow on this Exhibit KK from the lower edge; it was driven from the lower edge on the map to a point marked station 509, or about that point, and then it went out into the barren limestone apparently.

Q. How far?

A. On the vein lime; was driven out there for five or six hundred feet with no merchantable ore showing in it and we afterwards found that the Coolidge stope which we developed by cross cuts, was within three or four feet of the level but was not showing in the level and no indications of it in the level at all.

Q. Was it above the level?

A. Lying to the right of the level and passing under it.

Q. You were that close to it?

A. We were that near to it. I may say that the largest ore body was in the Black stope in the Telegraph and that was found in the same way, after we had driven by it, and afterward found that we were within a few feet of it, and by a cave it was disclosed.

Q. What is your system of development?

368 A. Our system of development has been and is, we keep our maps up, keep a surveyor constantly who keeps the work up from day to day almost or month to month at least and whenever we have a section which shows on the map that there is no known ore body in it, we will search around it but always within the lode lime to find if we can one of these small seams of which there are many of them containing vein matter and drive into what has the appearance of being a barren region and open it up, and if we cannot find such seams we drive right through, drive a drift right through the unexplored lime, looking anywhere in the lime between these quartzite walls for ore bodies.

Q. Have you in any instances struck out blindly through this belt of lime and run into an ore body?

A. We have in several instances, one that I notice right now, the yellow West drift. I tried to find for some years a connection rather than to strike out blindly while we were working the Big Emma

stope tried to find a seam or some connection on ore where I could find something to follow on. I cou'd not find it and so I struck right out in the unexplored ground tha showed no indication of ore and run into a rather good body of ore, but I don't know just what size it is and we have stoped out considerable shipping ore and there is considerable there yet. We have not developed it fully.

Q. Your attention was called to this ore lying under the Fairview partly and partly under the Northern Light on the No. 1 West drift, plaintiff's workings; you are familiar with that?

A. I am.

Q. What do you say as to whether or not that ore body is in the lime belt, the same lime belt that we have here to the south where the Kempton and Jordan are located, and how can you prove it is in the same belt if it is?

A. There can be no question about it at all; we connect practically with workings and I am informed now that we do actually connect on it.

Q. That isn't it; how do you know that the lime in which the ore body out at the north near station 876 or 806 is——

A. I think I understand the question and I think my answer is correct. We find the lime generally through these workings known as the Kempton workings; coming down we have the lime clear down on the side as shown in the purple level; we find the lime down at the bottom of the Sampson workings; we have the lime on the other side with that 40 foot connection that has been made that I have not seen; we have the lime on both sides there and then we come down through the lime through the Holden raise.

Q. In ore?

369 A. Yes, sir; ore; but there is lime showing, we can find lime and then on down the raise and out the yellow level all along and we connect right out on the lime.

Q. In lime every inch of the way?

A. Yes; we go on lime all the way.

Q. Have you from your examination of the workings in that property formed any opinion as to what the vein is what is here in controversy?

A. I have.

Q. What in your judgment constitutes the vein?

A. It is this mineralized lode which was originally a plain lime belt and now mineralized and altered and it is the lode now in which we find our ore.

Q. And the strike and dip and the limits of it you have already indicated?

A. I have.

Cross-examination.

By Mr. Hiles:

Q. Can you tell us how many different ore veins there are?

A. Why I only know one definition of a vein; I can tell you how many, I think I can tell you several kinds of veins that are laid down by geologists.

Q. Or by miners either, I do not care.

A. Not by miners; I do not think the miners, as far as my experience goes, distinguish—I believe they do distinguish between some kinds of veins. There is a fissure vein or zone, gash vein, bedded vein, there is a replacing of lime zone, there is an impregnated porphyry zone—that is all that come to my mind at the present time.

Q. Contact vein?

A. Contact vein, yes. I called it a bedded vein; I should have said contact vein.

Q. Did you ever hear of stockwork veins?

A. Yes, sir.

Q. Now I wish you would tell us what kind of an ore vein this is you have been describing?

A. This vein is the same vein that probably, or a very large percentage at least of the ores of this great basin region came from; it is one of the limestone zones, mineralized zones.

Q. Call it a contact vein?

A. No it would not be a contact vein; it would be a brecciated zone.

Q. Do you say that this is a brecciated zone of ore?

A. This is a zone of ore, this is a mineral vein.

Q. For how many miles?

A. Oh, it is known about five miles now, known and worked about five miles.

370 Q. How many years have you been manager and an officer of the United States Mining Company and of its predecessors in title in this ground?

A. If you make that apply to all predecessors, during my college career every vacation from July to October, my father, who was then the owner of the Jordan lode—I was sent here and placed in charge of the mines in the summer, and then in 1888, after I left college, I have been continuously in charge of that property with the exception of about three or four months.

Q. When did you first discover that the Kempton and Ashland mines were on this lode?

A. I have believed that they were on this same lode for some years.

Q. When did you first make the discovery?

A. I should say that I formed the opinion that they were on this lode, oh, 14 or 15 years ago.

Q. And you have known for that many years and more that parties have been working there and taking out ore?

A. No; not all that time.

Q. Well, off and on during that time?

A. Very seldom anybody worked there.

Q. They have been taking out ore have they not for the last fourteen or fifteen years?

A. I think they have taken a good deal of ore from the surface and the old dump was removed and they were working around on the surface off and on for a number of years.

Q. It is only lately that their right to continue to mine there was called in question?

A. I will have to ask you to state where; you say "their."

Q. In the mine, in the Kempton mine or in the Ashland?

A. If you mean in the Ashland, I think their right was never questioned by me to mine in the Ashland mine; if you mean working in the Kempton they have never worked there without my consent for eighteen years in the lower workings.

Q. You have not called in question their right to mine there until recently, have you? you haven't brought any suit?

A. No; I did not bring any suit.

Q. Nor the predecessors in title of the United States Mining Company?

A. They did not.

Q. Did not. It was open and notorious that these parties and their lessors and other parties were working in there, was it not?

A. I can say for the last fourteen years if they had ever resumed work there to any appreciable extent I should have stopped them, as I did stop them as soon as I did know they were working in that country.

371 Q. Now how far east of the Kempton mine is the Old Telegraph mine that you spoke of?

A. It is about 7000 feet. The extreme eastern portion of the Old Telegraph is about 7000 feet away.

Q. 7000 feet; over a mile?

A. Yes, sir.

Q. What are the workings of the Old Telegraph mine in there?

A. They are wholly in lime that is the ore bodies. As to the workings, of course, they come in in various ways—well, they all come in from the hanging wall side; one of our main tunnels comes in through the porphyry and then into the lode; another one goes in through the quartzite and then into the lode; and in various ways; they come in from the hanging wall side of the Old Telegraph and the vein going eastwardly, passes back of the gulch to the south, the lode, in that case is to the north of the gulch.

Q. It is a fact, is it not that there is no lime in that country, that the ore is all in the quartzite?

A. There is none of it in the quartzite; not a pound of it.

Q. Did I understand you to say to day or some time since the beginning of this trial that these cross fissures do not intersect or cut the quartzite as well as the lime beds?

A. Again, I shall have to ask you to be more specific as to which one you mean. There are two series of fault fissures; one is made in the tilting of the beds as I understand it and when the big bedded vein was formed, and then later is another series of fault fissures including the Ashland and others. The supposition is that the latter cut both the porphyry and both quartzites, at least I believe they cut both quartzites although I have not in all cases traced them into the hanging quartzite.

Q. There are cases then where the cross fissures cut both?

A. The one series of cross fissures in every case that I know of, because the formation——

Q. But there are cracks and fissures in the lime which do not reach to the quartzite bands on either side of the lime?

A. Many thousands of them.

Q. Now, I will ask you if generally along the line of what you call the lode the ore veins do not occur, the large ore veins, in cases where the fissures cut across both the lime and the quartzite?

A. The largest and richest and best portion of the vein that I know of is in a section 22,000 feet long in which there are no breaks crossing it.

Q. 22,000?

A. Did I say 22,000; I did not mean that. I meant to say 2200 and not 22,000; and in that section there are no cross breaks whatsoever known, and that is the richest portion, the largest
372 mineralized section that is known in Bingham, or at least that I know of in Bingham.

Q. Now, I want to call attention to your exhibit T; you have marked on it here certain large excavations, marked Cut, A, Cut B, Cut C and Cut D; you find considerable ore in that neighborhood?

A. Those were pretty much, if not all, some of those cuts were made in very early days before ever I knew the mine, and it is only by the indications that I can see and what I have been told and from your maps, make me believe that it was wholly ore.

Q. There was a large outcrop of ore there?

A. Oh, yes.

Q. Originally?

A. I presume so; I do not know it.

Q. It was mined out sometime before your knowledge and memory?

A. Part of it. As economic conditions changed I went back and took out what would pay and which would not pay in previous years.

Q. I will ask you if your company and the predecessors in title of your company do not own a claim which crosses your lode in a north and south direction at about this point?

A. We own four or five claims that cross there; there is the Excelsior, Galena, American Flag, the Red Warrior and Milan virtually cross it.

Q. The Excelsior is almost parallel to the Mountain Gem, is it not?

A. It crosses the Jordan; it is on both sides of the Jordan.

Q. I will ask you if the Galena claim does not cross in this neighborhood north and south?

A. The Galena vein crosses it.

Q. It is an old patented claim, is it not?

A. It is one of the old patented claims.

Q. One of the oldest patented claims?

A. One of the oldest patented claims, yes.

Q. And is it not a fact that there is a large fissure there called the Galena fissure?

A. No; it is not a large fissure there, the Galena I have worked very extensively myself for some five thousand feet back of the point you say, and I am very familiar with the occurrence of the ore in it, the size of it and the condition of it.

Q. Is it not from the Galena fissure that this mineralized rock caved?

A. No, it is not. There is positive proof that it did not come from the Galena fissure.

Q. You think not?

A. I should consider it conclusive evidence for myself that it did not come from the Galena fissure.

373 Q. You have seen maps of the West Mountain Mining district showing the locations there?

A. Yes, sir.

Q. Is it not the fact that the majority of the locations, mining locations made in that district, are made on north and south fissures?

A. No; I think not; I think the vast majority of them are made east and west. Some claims and some of ours unfortunately, were laid by our predecessors across it and you might look at the map and say that that would indicate that they were laid on fissures; they are not; there are not even fissures there, although the locations are across the vein on which they were located.

Q. Well, the majority of the locations on the vein are laid in a north and south course across this country?

A. Oh, I think not.

Q. You think not?

A. I do not think anywhere near the majority of them are.

Q. Now Mr. Holden, I will ask you if going west from the easterly end line of the Old Jordan claim you have ever discovered a fault in the strata, a large fault, and if you have discovered that the quartzite, that which you call the foot wall, is bending up and fixed so as to lead towards the surface while the lime to the west of the fault buts up against it?

A. If I understand you correctly, there is absolutely no evidence of any such a thing as that in any of this part of Bingham that I am familiar with.

Q. Do you know where the old Emma stope is?

A. Very well.

Q. That is on the fissure, is it?

A. It is nothing resembling a fissure.

Q. Is it on the fault?

A. No.

Q. In the neighborhood of that did you discover such a fault as I have mentioned?

A. No; there is no such fault there.

Q. There is no such fault there?

A. No; nor anything approximating it.

Q. The fact is here in Kempton ground and for a considerable distance the lime dips to the north?

A. Yes, sir.

Q. That is the fact is it not?

A. That is right.
Q. And the quartzite that is below has that same general dip?
A. It has.
Q. That is true?
A. That is true.
Q. Now don't you know at this point which I have named, or near it, the quartzite is in that position going up folding up?
A. It is.
Q. And do not the lime beds to the west go up against it in that way?
A. They do not.
374 Q. Do not?
A. Absolutely no evidence of such a thing as that.
Q. You never have seen it?
A. It is not there; I have seen every opening there; I am very familiar with it.
Q. If it be there you have not seen it?
A. Yes; but it is not there.
Q. Is there any part of the tunnel called the United States tunnel No. 1 where on one side it is quartzite and on the other it is lime?
A. Yes, sir.
Q. You say yes?
A. Yes; sure.
Q. Where is that?
A. It runs along the roll; we run right on the contact of the roll and follow the roll right along until it pitches off to the north and to the right of the tunnel, and then we are back in the lime again.
Q. Isn't it a fact Mr. Holden that at that point in the United States tunnel the lime bed dips right down to the north whilst the quartzite goes up?
A. I will ask you again to specify the exact point.
Q. The exact point, I think it is about 180 feet from the portal of the United States tunnel No. 1?
A. 180 feet beginning at this point.
Q. It is at the point where the upraise to the Big Emma stope intercepts the stope?
A. No; there is no evidence of that.
Q. No evidences of that?
A. None at all; it is very simple and it is perfectly plain to anybody.
Q. Now, recurring to this map Exhibit T, or to this map Exhibit S you say that the Kempton tunnel starts in in quartzite?
A. Yes, sir.
Q. For what distance does it run into the quartzite?
A. Approximately 180 feet, as I get it from the map.
Q. How far in do you go before you encounter the first ore that you speak of?
A. 180 feet.
Q. That is on the contact?
A. That is on the contact.
Q. You mentioned a number of fissures in your direct examina-

tion. Did you mention the fissure called the Rip Van Winkle fissure?

A. The Rip Van Winkle fissure does not go through that tunnel I saw the Rip Van Winkle; I take what you call that over the Rip Van Winkle ore body is what you mean making off on the dip of the vein of the Jordan lode; there is a small crack going up that has some ore in it, but that fissure is confined wholly to the lime and of course does not show in the Neptune tunnel.

375 Q. Is there not a fissure there called the Rip Van Winkle fissure which had ore in it and the ore wholly in the quartzite?

A. Oh, no.

Q. There is no such fissure?

A. No; I don't know of any such fissure.

Q. You find it is 180 feet before you find any evidence of ore?

A. Yes, sir.

Q. That is, of course in the Kempton ground?

A. Well, that is in the Mountain Gem.

Q. It is in Mountain Gem ground and not in Kempton ground; you have not reached the Kempton ground?

A. Not yet.

Q. You run 180 feet through quartzite there?

A. Yes, sir.

Q. How much further do you run before you will reach Kempton ground?

A. Approximately 75 feet, may be 80.

Q. Now then you found what you call seams numbered from 1 to 15?

A. To 17, as I recollect it; that is my recollection.

Q. Counting the fissure?

A. 15, your recollection is correct.

Q. 15 seams?

A. It is carried out beyond the Sampson fissure in order to reach 17.

Q. The most of these seams were in Kempton ground?

A. I gave the exact number; there are a part of those in Kempton ground and a part in Mountain Gem and a part of them in Jordan; I am not sure but nearly all of those seams, if you would follow them, would come up in the Mountain Gem and the Jordan.

Q. They might and they might not?

A. Well, if they preserved their present course.

Q. If they did?

A. That is problematical, in that country in that broken mineralized country; it is impossible to tell how far you can go with one seam.

Q. Now you have some working ore in the Mountain Gem?

A. Yes, sir.

Q. Right on your lode?

A. Yes, sir.

Q. There was no ore that you could get a value from?

A. I bought the Mountain Gem myself, that is I negotiated for

3——

Q. I do not care anything about the history of the title. I asked you about the fact if the ore you found in the Mountain Gem was valueless?

A. It was neither in quality or quantity sufficient for shipping.

Q. Now you have testified here upon this map Exhibit T about a drift or tunnel which is marked 5343?

A. Yes; 8-43.

376 Q. Is that an 8?

A. Yes; it means stations on the surface.

Q. Is that a tunnel or cut?

A. It is a tunnel run in ore from this little shaft near post 1 of the Mountain Gem.

Q. You say there is ore in that tunnel?

A. No; there are seams of that oxide of iron which is scarcely ore. There is none of this working from the Kempton incline out this way that was in ore.

Q. None of this stripping is in ore?

A. No; it is this oxidized iron; it is mineralized matter but no ore in a merchantable sense at all; but it is in the vein in connection with the vein.

Q. So you think none of this stripping here in Kempton ground is in ore?

A. None; I could see no ore. There were some pieces laid out there some of our men found but I did not see them in place; but there is nothing there that looks like merchantable ore.

Q. Did you observe a little fissure here, a little cross fissure?

A. Why the whole country is fissured.

Q. Did you observe one there?

A. Yes; certainly there are.

Q. Did you observe one at S elevation 1343; did you observe anything there?

A. Yes; there is a little fissure there.

Q. Now where in the Kempton tunnel did you first observe ore in paying quantities?

A. On the quartzite, lying on the quartzite, as soon as we got into the vein, into the lode, found ore.

Q. In the quartzite?

A. Oh, no, not at all; in the lode, lime lode.

Q. After you got into the Kempton ground, where did you find ore in paying quantities?

A. There are several of those seams that could be worked to a profit by a leaser and make money there, and nearly all of these would justify a company in working them; I would not hesitate to start work on any one of those seams and expect to find ore in any reasonable distance.

Q. Is it not a fact that you do not find any ore, in the Ashland besides that which lies upon the contact until you reach a fissure called the Kempton fissure?

A. Oh, no, there are several fault veins back there and they are more or less filled with vein matter and run in various directions. There are several of them that would still pay to follow—I don't

know about paying a company; a company would not get very rich on them but a man could make wages in running on them.

377 Q. The truth is Mr. Holden that the ores occur in the neighborhood of these cross fissures?

A. Oh, no not generally; they do occur there sometimes and sometimes they do not.

Q. Do not rich bodies and paying bodies of ore occur in these cross fissures?

A. Oh, no; they are not in the cross fissures at all, any paying body; there is no paying body of ore in the Jordan lode, in all of that mineralized lode, there is no paying body that I know of that is within one of the fissures.

Q. Now commence on the westerly end of this disputed territory and name the fissures which cross this so called lode?

A. Yes.

Q. Now the first is the Ashland fissures?

A. It is.

Q. Now you run the United States tunnel No. 1; that is what you call the West drift on your map?

A. That is No. 1, that is West drift No. 1.

Q. West drift No. 1?

A. Yes, sir.

Q. That is continuous until you reach this country north of the summit of Jordan hill, is it not?

A. It is.

Q. Now is it not a fact that you run that tunnel for the purpose of cutting and finding an ore body in the neighborhood of this Ashland fissure?

A. No, sir; it is not. We run it—that tunnel runs approximately on the strike of the lode and it is the way that we prospect unknown sections of the vein.

Q. Is it not the fact that there are hundreds of feet of country rock between these workings here and the workings which you have here along the line of the Ashland fissure?

A. Your definition of country rock is what?

Q. I will say limestone?

A. No; that tunnel is practically the entire distance within the lode. When we run it we did expect and might have expected any minute to be in an ore body. We were most of the way within a few feet of the ore body in that cross cut off there. All of that country is not wholly prospected or approximately yet; but we have large ore bodies now opened and ready for shipment.

Q. Do you say that all of that drift is in ore?

A. No; I said up to the point near where you pointed a minute ago it was within the lode, within the lime lode.

Q. I understood you to say Mr. Holden that this band of quartzite which is cut here by the Neptune tunnel is the foot wall of your so-called lode?

A. It is.

Q. And that the lime which is here is lime which lies upon that supposed foot wall or alleged foot wall; is that so?

378 A. The lode is the lime; the lode is this brecciated limestone, crushed, mineralized limestone lying between the two quartzites.

Q. Is this lime which you have in here through the United States tunnel in the Fairview and Northern Light the same lime as the Kempton lime?

A. No question about it.

Q. Did you ever see the belt of quartzite upon the same hill?

A. I have.

Q. That is of course the same as is down here at the foot wall?

A. It is not.

Q. What relation has that to the lime beds?

A. Why, the quartzite that is the foot wall of this lode extends clear through the district for miles and the hanging wall of this also goes with slight interruptions of porphyry. There are two parallel bands of quartzite that run on ore for thousands of feet.

Q. Is there any band of quartzite at the summit of Jordan Hill?

A. Yes, sir; the hanging wall of quartzite of this great lode.

Q. Is not there lime on the north of Jordan Hill north of the band of quartzite?

A. Yes; the lime that is followed substantially parallel with it from where first seen in this place way up to the summit of the Oquirrh Mountains.

Q. How in the world does this bed of lime in the Kempton and Jordan and Mountain Gem ground get around on the top of that hill and pass that quartzite?

A. It has never been stated by anybody or even suggested by anybody that I ever heard of that these two are the same lime bodies.

Mr. Dickson: He is asking about the lime beneath the ore body in the Fairview.

A. I think he said and got around on top of Jordan Hill as I understood him to the upper belt of lime, and I answered that it does not come around the top of the hill; it is a separate and distinct lime bed.

Q. It is a fact, is it not, that the Jordan claim lies on the south side of Jordan Hill?

A. It does.

Q. Above that is the Kempton claim?

A. It is.

Q. And then going up the mountain and upon the summit there is the same quartzite that you saw?

A. Yes, sir.

Q. And then when you get over on the other side of Jordan Hill the north side of the hill, there is a band or stratum of lime?

A. There is.

Q. Now you then say that this lime is identical with that, or at least that that quartzite body is between them?

A. I said the quartzite body was the same but the lime is not identical; they are conformable stratas but not identical.

379 Q. Then you acknowledge that this stratum of lime is not identical with the one on the North side of the hill?

A. You are speaking of the surface and I do not want to be misunderstood. You are asking if that is the same lime bed as the Jordan line. The Jordan zone dips right through the hill and of course looking vertically through the earth you would come to the same lime bed not only in the Jordan Hill but in the next hill beyond.

Q. You can explain it in your own way; if you say they are the same tell us how.

Mr. DICKSON: Take three books, one to illustrate the quartzite and the others the two lime beds.

A. The lower book represents the Jordan lime, the black book the quartzite and the upper book representing the upper lime and that is represented in the summit of the hill by throwing the black book up; now then you come over the summit of the hill and there you strike the other bed of lime.

Q. Then the Jordan lime and the Kempton lime is not in between the bed of quartzite which this tunnel cuts and the quartzite which is on the summit of the hill?

A. Why certainly, as I have just explained. I need another black book to make it clear.

Q. I think you do.

A. I omitted in my strata of books to put in the under quartzite. Now I have them all. The first black book is the under quartzite, then comes the Jordan lime, then the upper quartzite and then above that what we know is the Commercial lime, which runs all through this district and that is a representative section of the country.

Q. Do you say that these two strata of lime are the same?

A. I said every time that you asked me that they were not the same and tried to make it as plain as I could.

Q. Then I misunderstood you; I understood you to say that they were the same.

A. I don't think there was any possibility of my stating it that way.

Q. When Col. Wall was examined this morning on cross examination as I understood it the questions carried the implication that he was wrong in saying that the two lime beds were different.

A. I don't think we ever questioned that.

Q. Then there is no controversy about that?

A. The two lime beds are separate and distinct.

Q. If that be true then how do you explain that the ore vein there is the same vein as here, the same lode?

A. I have already explained it and I will be glad to go over it again. We come right down from the surface through the
380 Kempton working to the bottom of the Sampson work, what is known as the Sampson work, where I hold the pointer, near station 2 d; come around No. 1 tunnel in lime, without describing it in detail, to station 637 where in lime we come out of cross cut up a raise all the way in lime and ore, out in the ore body with the lime showing and we were within 40 feet of a connection where there was ore—the connection has since been made, but I have not been through it. Now we have the lime and ore body connecting right straight through to the No. 1 level, come right out the No. 1

level on lime connecting right across and into the region that you were mentioning

Q. In that way you connect this lime over here?

A. No, sir:: that lime over there is above.

Q. When you say over here, what did you mean?

A. The upper stratum I pointed to and showed with the upper book is above it.

Q. You never observed it at any point in this drift where it cuts through the belt of quartzite?

A. No, sir—when you say this drift, which do you mean?

Q. I mean the West drift?

A. If you mean the No. 1 West drift, no, it does not cut through: we cut through the quartzite far in but the level—that is the one probably you refer to, or at least I think it is, is the right branch where we drove it through the roll, and we have the roll raising to the north on the other side, pitching to the north on the other, the level on which I hold my pointer came right through the roll and we have in additoin, to show that is surely so, we come to what is called the Clark South and the Clark north, and they connect right through the roll and there is ore all the way there.

Q. You stated in your direct examination, that there was one point where the ore vein which you discovered pitched to the south and another point where it pitched up to the north; where was that?

A. Where this roll occurs and sometimes the roll has no ore, but many places, I might say 50 per cent. of the time the roll has ore on it as I was pointing out to Judge Dickson, the raise numbered 1, called the 90 foot raise, not numbered, here or not lettered, but indicated at station F 59 with hatched lines, the roll is rising and we have not yet reached the summit of the roll. We do go up in workings right to the summit of the roll and then go right down on the other side showing at that point, at that level and there may be a place in there where the roll is horizontal and did not go up.

Q. You are pretty sure that what you call a roll is not a fold?

A. Absolutely positive.

Q. And that the limestone strata does not butt up against, it?

A. Oh, no, there is no evidence of that at all.

381 Q. This tunnel that you have last described, or near it—I am not particular about the number of feet:

Is it not true that it is right across it, strikes right across the dip?

A. In this great mineralized lode with its crushed and broken mineralized condition it is almost impossible to detect the bedding planes: the mineralization was so extensive and the alterations so extensive you could not detect the bedding planes that were in that originally; it is all metamorphosed, changed, altered.

Q. Metamorphosed rock may be stratified?

A. It might be and very frequently is.

Q. I am asking now if the lime stratification is not cut by that?

A. No; in that mineralized section crushed and broken as it is the stratification lines have been obliterated.

Q. Do you say Mr. Holden that this breccia that is found in the lime?

A. Brecciated; not breccia.

Q. Well, brecciated: I am not particular about the pronunciation?

A. They are different words and not different pronunciations.

Q. Proceed?

A. It is all fissured very similar to that in the Neptune tunnel and in all the tunnels you run through it. You find in the workings irregular breaks running in various directions and run right through on that section with irregular breaks in the lime.

Q. There is no stratification of the lime there?

A. There is actually no stratification showing.

Q. What is breccia or brecciated?

A. I want to repeat that I was not intending to correct you at all. Breccia is a broken loose rock on the surface; and by brecciated I meant that it was cracked and broken into various sized pieces, blocks and fragments.

Q. Of what sizes are the fragments of brecciated lime?

A. They may be all sizes; they might be from a mere grain to very many tons in a block.

Q. I would like to ask you if when you are running through breccia or brecciated strata, if brecciated strata be permissible, if you are required to timber your drift?

A. It depends entirely upon the amount of crushing and movement that it has undergone. Frequently we can drive through it without timbering it.

Q. Where it is highly brecciated?

382 A. Oh, if it was highly brecciated we would have to be careful in driving to look and see the nature of it and in many cases would be very certain to put in timbers.

Q. You would have to put in timber every foot of the way, wouldn't you?

A. Not necessarily.

Q. Where it was highly brecciated?

A. Yes. It would be wholly a question of determining whether the breccia could be prevented from coming down with timber. Breccia will drop through a comparatively small opening at times and in such cases we timber it.

Q. How much breccia must you have to render it necessary to be timbered?

A. There must be enough timbering to prevent the breccia from coming down especially if it is in small fragments.

Q. If there is much breccia you are liable to have big slabs of the limestone fall on the men?

A. That would depend entirely upon the size of the opening; a piece 12 feet wide would not fall into a place only five feet wide.

Q. It would not?

A. No, sir. What I am trying to explain and indicate by that Judge is while the ground might be broken into great blocks, brecciated in that sense, in driving a tunnel through such broken country you would not have to timber it.

Q. This being brecciated limestone across that country you have timbered it pretty much all the way?

A. It is only timbered in places; not all the way.

Q. How many places?

A. Not timbered in the levels at all as I recollect running out until we get pretty near the ore body and then there are some few timbers put in, but not very many.

Q. Not much timbering?

A. Very little.

Q. That is solid rock there in the tunnel for hundreds of feet, is it not?

A. For the main part it is not timbered and stands itself for the most part of the way, as it is frequently in the middle of ore bodies. The purple or Drain level is largely in the ore body, but it is not timbered.

Q. The ore bodies in that country exist mostly in the limestone do they not?

A. Wholly in this lode of course they are wholly in the limestone.

Q. Why is it so?

A. Well, the original mineralization was confined to the lime belt, and therefore the ore is there.

Q. Why should there be more ore veins in the lime than in the quartzite?

383 A. It is a well known geological fact and illustrated in practically every region where investigation goes on and has gone on, that the lime as is well known is a friable rock in the uplifting of the country. Quartzite will preserve its character and structure and will not fracture and break readily while the lime, being a friable rock will be easily crushed and will be crushed on its bedding planes as well as perpendicular planes to that and in fact in all kinds of directions, and as the result of the tilting you get this crushed and broken up zone. It is a very common occurrence.

Q. You know that some geologists say it is because the lime is more easy of corrosion?

A. That follows as a consequence the point I have explained. The mineralization could not go on, there will be no chance for erosion or corrosion or metato somic action or any of the vein actions to go on without openings for circulation. This motion and crushing in the manner I have described made the opening which allowed the mineral solutions to go through, and therefore they came up and then follows what you speak of, the ground being in the right condition for the deposition, it naturally followed that was where the ore would be deposited, where there was an opportunity for circulation: wherever there was an opportunity for circulation at that time, and not where there was no such opportunity.

Q. Wherever there were facilities for circulation there the ore would be deposited?

A. Yes; it would.

Q. Now are the facilities greater or less in the neighborhood of the fissures away than from the fissures?

A. It would depend entirely: for instance speaking of the Telegraph, that was a long way from the fissure region and the facilities were much better than near the fissured regions, for instance

the Ashland and it is wholly a local question which point you would pick out.

Q. You think that is a local question. It is a fact Mr. Holden that the crust of the earth will change not only from mile to mile but almost from rod to rod in geological structure?

A. No; I should not say that was a fair statement of the geological conditions.

Q. Well, it will change certainly from mile to mile will it not?

A. It doubtless does in places from mile to mile but of course that has nothing to do in this section in such indications as we have here.

Q. But you have explained that there are local conditions here?

A. I say that there are local conditions; they are right in the middle of ore body, the middle of a large mineralization;
384 you will find a block of lime unaltered left here with ore lying all around; there is a local condition, for some reason in this crushing I have described, that the block of lime was not fractured and therefore the mineralizing solutions could not get into this block and the block retained its original surface substantially.

Q. At some other point there might be another condition, viz: an intrusion of porphyry, that would produce facilities for the circulation of which you speak?

A. Possibly. I have seen that in other districts but I have not seen such condition from the porphyry here, that being younger than the vein. I do not mean younger than the vein, I mean later than the vein.

Q. I am not asking you about that. I am asking you if these conditions along this so called lode are not local as you have said, that is to say here, the condition under which the mineralization occurs is different from the condition under which it occurred here?

A. In one place we will have the whole lode from hanging to foot wall in ore, and then perhaps at the next point it will be fifty per cent and in between there is this net work here—stopes running here and there and workings showing, while it is all continuous ore, or that there is continuous ore for a long distance, the amount of of ore and the amount of mineralization varies from one local place to the next local place.

Q. Are not the agencies which have produced the mineralization at different points different?

A. No; I think not This vein during its formation in the motion when this crushing took place and the mineral solutions came through, can be placed at that period, as one great trough lying between two quartzites, with fractures running here and there, and the great mass of the mineral solutions moving up from the various openings to which the more pronounced mineralization and deposition have occurred, and where else should it come up and taking it altogether it is mineralized from one end to the other in substantially the same manner and at the same time substantially, and in proof of that this west district for five miles is in ore sub-

stantially, simply varying in richness the ore being substantially the same.

Q. Now the fact is that quartzite is a sedimentary rock, is it not?

A. Yes, sir.

Q. And it was sometime laid down in the bed or bottom of the ocean?

A. Yes, sir.

Q. So likewise limestone is a sedimentary rock?

A. Yes. It is a sedimentary rock.

Q. And at sometime has been laid down in the bed of the ocean?

A. Yes; it has.

385 Q. Naturally this strata at one time had a position of horizontality or approaching that?

A. They were probably horizontal.

Q. And sometimes by subsidence or by upheaval from below, these ore bodies are tilted up?

A. You are speaking of this region here?

Q. Any region?

A. Well this region is pretty well worked out by the geologists and we are pretty familiar with the probabilities of how this region was formed.

Q. Well, now this fissuring that you say exists here was that from a subsidence?

A. No; this mountain range, the Oquirrh Mountain range in which the West Mountain Mining district or Bingham is situated, is upon generally speaking, an anticlinal, the beds coming up on the east side and going down on the west.

Q. And then if it is an anticlinal the flexure has been made by upheaval?

A. No; a pushing together of the sides.

Q. A pushing together of the sides?

A. Yes.

Q. Of what?

A. The beds. For the purposes of illustration I will assume that the bed is cut off at a certain point and then from the contraction of the earth's crust it pushes the edges together and in that way the mountains are formed. That is the usual explanation of that.

Q. Now, however it occurred, the fissuring and fracturing which would occur here at the Old Telegraph might be entirely different from the fissuring and fracturing which occurs in the Kempton and Ashland and Mountain Gem and Jordan Mining claims?

A. It is difficult to say what might or might not have happened but it did happen the same through this lime belt.

Q. They did happen the same?

A. Practically they all occur in the lime taking, them altogether, the whole lime belt is fractured, generally speaking, in the same manner.

Q. What do you mean by saying that these ore deposits depend upon local conditions?

A. I thought I explained that carefully. I will try again. In a certain region, we will say in a certain section, the crushing came up

as a relief to the strain the bending being no more in one section than in another, that is perhaps, we had the relief taken up in half a dozen fissures and cracks in one place and the next place it was taken up in twenty, and that may change from place to place as you go down, but going down on it 200 feet you do not find a different condition under it, that these relief fissures did not extend down even to a depth of 200 feet.

386 Q. Mr. Holden if you see an outcrop of ore in Kempton ground, such as pay ore and such as a miner would locate and you would see in the Old Telegraph 7000 feet away an outcrop of ore 100 or 200 feet in length, would you say that that apex is the same apex as the apex here in Kmpton ground?

A. You can stand on the Kempton ground and you can look right towards the Telegraph and you can even see the Telegraph and see the condition you are describing, the ore cropping on the surface; you can see the ore cropping all along here nearly a mile coming right to the surface wholly within this lime and visible right from the spot you are speaking of.

Q. If in the Old Telegraph 7000 feet away the miner finds an outcrop of ore at the surface and he locates his claim on it is that the same apex as the apex here in Kempton ground?

A. If the same apex continued on to Kempton ground certainly, but if you mean there is no work and you could not see between the two, why it is another story, but of course that is not the condition here; you can see between, you can see all the way between them, and see the ore coming up to the surface all the way near practically the entire distance.

Q. Suppose that there is a vein or lode such as has been described by the witnesses for the defendant outcropping in the Kempton ground and another outcrop in the Mountain Gem ground, would you say that they are the same lode; do you say they are the same lode unless there is some union of the ore between the two croppings?

A. There is no question about that being the same lode, because we can connect right around on it and can connect the hanging to the foot and can connect right back in just a comparative short way, at least, we have got the whole thing in ore, while in the case you speak of with the little work done. We have a large ore body near the hanging and one near the foot and a half dozen more workable ore bodies between. The work has not been extended. In one sense it is probably continuing from the foot to the hanging wall as in the Kempton as described by the witnesses. They have not reached by any single working what might be called the foot wall here but still there is ore underneath for nearly every foot of the way, and ore still going down underneath.

Q. If, as certain witnesses have said, that there is a fissure here with ore stratified with the fissure, can you say that that is the same as the lode running north and south?

A. It is surely easy to tell that that is the same lode as this.

Q. This lode that runs north and south?

A. Near the north and south Ashland fissure is a fissure I have

specified coming later, and is proved to be later than the
387 Jordan lode, and it passes through and is seen in the foot wall and hanging, but it is not that ore body that we are talking about.

Q. It is a different lode then from your Jordan and Telegraph lode?

A. Oh, it is a different vein entirely.

Q. A different vein?

A. Yes, sir. The Ashland vein can be followed for quite a distance into the Big Jordan lode and can be traced. It is like all of these fissures; it is somewhat difficult to follow through but the way we do trace them we get a line from the quartzite on either side or from one quartzite wall and follow that line out, but we can't always find the limits of the fissures which we take to be one of the cross fissures.

Q. You do admit, do you that the Ashland fissure is a different lode from the Jordan lode?

A. Oh, there is no question of it here at all.

Redirect examination.

By Mr. DICKSON:

Q. You said there was ample evidence, in your cross examination, that the great ore bodies shown on the surface of Exhibit T and marked at Cut A B C and D were not referrable to the Galena fissure which cuts through them. What are they?

A. They do not follow the Galena fissure.

Q. How do they lie?

A. They lie quartering across it and connected by underground workings with the great ore bodies running east and west and great enormous stopes are carried up on the ore bodies.

Q. What is the fact as to their being conformable or nonconformable to the bedding of the country?

A. Many of these stopes, most of the stopes connected with these great ore bodies that were there, conform to the great Jordan lode.

Q. There have been little or no developments done in the Mountain Gem?

A. No pay ore has been found there is the reason of it.

Q. Now you were asked how long you had known that the Kempton people were working in this Jordan lode. I call your attention Mr. Holden to the northerly and northeasterly extremity of what we all know as the Sampson ore body back to the vicinity of the big stopes. How much has been done between these two points within the last few years?

A. Practically all of it without the last four or five years.

Q. It was practically vacant ground two or three years ago?

A. It was.

Q. Will you refer me to the place you spoke of on cross examination as the Clark north and Clerk south raise, in which you went over the roll and in ore all the way?

388 A. They start from near station 508 to level No. 1, yellow level, where I hold my pointer.

Q. Point to the raise?

A. And then here is the Clark north raise.
Q. And going up in what?
A. Going right up in ore.
Q. On what?
A. On the roll on the south side of the quartzite.
Q. Where do you go over it in ore?
A. Go right up connecting in what we call the Excelsior workings near station 724, and then we came right into the ore body that lies through these workings and on the other side go up the North Clerk raise until we meet the same ore body.
Q. You go on the quartzite this way and then go over the summit of it and down on ore all the way do you?
A. No, sir.
Q. Did you have to timber the Coolidge stope?
A. Yes, sir.
Q. Limestone is more readily soluble in water carrying carbonic acid than quartzite?
A. Yes, sir.
Q. That would account for the extensive mineralization that the limestone has?
A. Yes, sir.
Q. Is there any evidence of greater enrichment of this limestone belt that you speak of as a lode in the vicinity of these fissures than elsewhere?
A. No evidence that I have ever seen.

And thereupon the Court adjourned until to-morrow morning, Friday, the 24th day of October, 1902.

Redirect examination of Mr. Holden, by Mr. Dickson resumed as follows:

Q. Taking the point on the surface that is immediately south of the ore body that is shown on the map as being on the 100 foot level, plaintiff's workings lying under the Fairview and partly under the Northern Light, at a point on the surface south of that and about midway of the lime belt, and taking the horizontal distance and vertical distance between the two points, have you ascertained what the angle of the dip would be that would be required to carry you from the surface of the lime to that ore body under the Fairview and Northern Light?
A. I have figured from a point by what is known on our map as the————raise and what is on their map as Air shaft raise down to the Northern Light ore body at 27 degrees.
Q. Calling your attention to the westerly one hundred and eighty feet of the lowest workings of the Kempton people and the westerly 100 feet of what is called on their map the Turnsheet level, I would ask you to say whether a part of those workings is in ore?
A. In ore.
389 Q. And how does the ore lie with reference to the beds of limestone?
A. Conformable to he beds of limestone, pitching with them, running along them.

Q. State how near the strike of these ore bodies approach a right angle of the strike of the Ashland fissure?

A. They are almost exactly at right angles and that is shown very distinctly in several of these levels.

Q. What have you to say as to whether or not these ore bodies in these two pieces of work I have directed your attention to are laminated vertically?

A. They are not.

Q. Explain what if any evidence there is of a vertical break through there?

A. There are vertical breaks through that ore body in several places and there are some of them short breaks. In one place on their map you can follow a break there to a point where you can see it fading right out.

Q. Is that true of the ore bodies throughout the mines?

A. Oh, vertical breaks are common.

Cross-examination.

By Mr. HILES:

Q. How many times have you been underground since the last tracing work was done?

A. I should say four or five times—do you refer to the last connections which were made through?

Q. Since the last work was done, if you know when that was?

A. That is a little difficult to answer. They had not entirely stopped when I was there; they were still working but since the last work shown on any of these maps, I think I have been in there four or five times, and, many times, of course, previous to that.

Q. Did you ever go in there to examine the ore body specifically for the purpose of determining the relative structure of the fissure and the bedded vein?

A. Oh, yes, I have. We have a record. I have a record of every fissure, I think that cut across in all the workings, not only in these but in all the works east and west and north and south, in all of them.

Q. You have a record of the fissures?

A. And the structure of the ore bodies. Surely in a large and valuable ore body we would do that.

Q. You went in for the specific purpose of examining with reference to the structure?

A. Why that specific purpose and others.

Q. Who else made that examination with you?

A. Mr. Palmer and Mr. Tyler.

390 (Next witness A. P. MAYBERRY.)

ANDREW P. MAYBERRY, a witness produced by the plaintiff, being first duly sworn, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. What is your full name?
A. Andrew Pearsall Mayberry.
Q. Where do you live?
A. Bingham.
Q. What is your business?
A. Mining.
Q. How ong have you followed that business?
A. Twenty-four years.
Q. How long in Bingham?
A. About twelve.
Q. Are you connected in any way with the United States Mining Company?
A. I am.
Q. In what capacity?
A. Superintendent.
Q. How long have you been a superintendent?
A. Two years.
Q. And are now occupying that position?
A. Yes, sir.
Q. You are acquainted with the workings in the United States Mining Company's ground?
A. Yes, sir.
Q. And with the claims known as the Jordan, 64, and the Gem claims?
A. Yes, sir.
Q. And with the working still easterly on their claims?
A. Yes, sir.
Q. Easterly of the east end line of the Jordan?
A. Yes, sir.
Q. The workings in the Jordan claim are in what character of rock?
A. Lime.
Q. About what is the width of the lime belt?
A. About one hundred and fifty feet.
Q. And the footwall of that lime belt is what?
A. Quartzite.
Q. And the hanging wall is what?
A. Quartzite, and porphyry in places.
Q. Porphyry in places. Starting from the westerly end of the workings shown on this map, Exhibit S, and coming easterly, how far have you traced that lime belt that you have spoken of?
A. Approximately to the easterly end of the Brooklyn.
Q. And that would be a distance of about how far altogether?
A. About two miles, I should think.

Q. Have you traced it westerly also beyond the throw spoken of?
A. No, sir.
Q. Have not traced it beyond to the west. Coming to the map Exhibit S, Mr. Mayburry, I will call your attention to the workings in purple. Can you give me a station number in that level where it crosses over the Sampson stope?
391 A. 863 there, at this point.
Q. You are familiar with the stopes lying immediately southwesterly from this station?
A. Yes, sir.
Q. In what is called the Sampson fissure?
A. Sampson fissure—yes, sir.
Q. Do you know whether or not a connection has been made with those stopes from the United States Company's workings?
A. Yes, sir, there is.
Q. When was that connection completed?
A. Tuesday night.
Q. Of this week?
A. Of this week.

By the COURT: That is the thirty or forty feet Mr. Holden spoke of yesterday.
Mr. DICKSON: Yes, sir.

Q. That connection was made last Tuesday. I will ask you to state if you can go now from the point of connection through the surface workings down through No. 1 level to the United States Mining Company?
A. Yes, sir.
Q. Through what do you go—what material?
A. Ore.
Q. How—continuously?
A. Continuously.
Q. Absolutely?
A. Absolutely.
Q. Have you samples taken every few feet from that point of connection?
A. Yes, sir.
Q. They are here to exhibit if they are desired?
A. Yes, sir.
Q. Point out where in that line of connection you come to the 100-foot level of the United States Company's works in ore?
A. Right at that winze.
Q. Where the elevation point 1103 is now?
A. Yes, sir.
Q. Now can you point me to that on Exhibit KK?
A. That is the Holden raise marked there.
Q. Is that the point (indicating)?
A. No, sir; here is the point, right there.
Q. Where you make the connection?
A. No. Where I follow ore to the No. 1 level.
Q. You followed ore from the point of connection from the foot

of the Holden raise back to where you are now pointing, which is between Stations 537 and 641?

A. Yes, sir.

Q. Now going thence westerly as far as Exhibit KK carries you, state how continuously you can follow ore?

A. We can follow ore continuously as far as shown on that map.

Q. As far as the map goes?

A. Yes, sir.

Q. And you saw what is outlined on this Exhibit KK in red, square sets, and marked, in which is found the Coolidge crosscut?

A. Yes, sir.

392 Q. Do you know what that ore body is called?

A. The Coolidge ore body.

Q. Do you know whether or not what is known as the Coolidge ore body by your company is as extensive northerly and southerly and easterly and westerly as shown upon that map?

A. On its dip?

Q. It is dipping how?

A. It is dipping to the south.

Q. And is a continuous ore body?

A. Yes, sir.

Q. And then what do you call that part of these workings on the same ore body running from the easterly line of what you call the Coolidge ore body?

A. That is the Clark.

Q. That is called the Clark as far as the workings upon this Exhibit KK are shown?

A. Yes, sir.

Q. And is the Clark ore body easterly and westerly and northerly and southerly as extensive as shown on Exhibit KK?

A. Yes, sir.

Q. Now get your bearings here and go to Exhibit S and say where the easterly end of what is shown as stopes on KK connect with the stopes going east and shown on Exhibit S?

A. You leave off on that map there.

Q. You leave off on KK there; what point is that? Near what station is that?

A. 507.

Q. Near Station 507?

A. 507.

Q. Now from thence to the easterly end line of the Jordan, Lot 64, state how continuously you go in ore?

A. You follow ore along the 100-level and you go down this winze to the Big Emma; you go through the Big Emma out to the Robbie drift; you take the Robbie drift and follow ore out to the Ivy stope; from the Ivy stope you go into the Big Iron stope, and from the Big Iron you go into the Dolomite stope.

Q. The Dolomite stope?

A. Yes; this is the Dolomite stope, and from the Dolomite into the Lion's Den, and from the Lion's Den into the Jones. In the

Jones you can go down into the Piper and come out at the compromise level.

Q. In what?

A. In ore. To the east, easterly going out in the Bemis stope, the Compromise, and out through the Tracing stope.

Q. Nearly to the end of what is shown on Exhibit S?

A. Yes, sir.

Q. Now during that stretch of country, state in a general way whether in this stoping the ore body has been large or small?

A. Some of them very large.

Q. A continuous stope?

A. Continuous stoping.

Q. State whether you know that the stoping throughout that territory is as extensive as shown by the square sets on Exhibit S? You are familiar with the map?

393 A. Yes, sir. Yes, sir, I think it is.

Q. You come to the 80-foot map marked Exhibit BB, and indicate on that where the easterly end line is of Lot 64 where you stopped?

A. That is the easterly end line.

Q. There is where you quit on Exhibit S?

A. Yes, sir.

Q. Going from that point—the easterly end line of the Jordan—still easterly, show what tracing you have in ore and through what line of workings?

A. You can come up through the drift here from there.

Q. Call the stations, to show generally where you are going?

A. Come out at Station 88.

Q. That is Station 439?

A. 439, out through the tracing stope to the Green level—you come to the Green level.

Q. And its connection with what is called the Utah tunnel?

A. Yes, sir.

Q. In what?

A. In ore.

Q. Going on from there easterly?

A. Then you follow the Utah tunnel, which has quartz—not ore there.

Q. Not pay ore?

A. Not pay ore.

Q. Is that quartz continuous?

A. Yes, sir.

Q. Go on?

A. You come out at this point 590.

Q. Now immediately above that, state whether or not there is a large open cut to the surface?

A. There is.

Q. At the surface; in what was that?

A. There was ore mined above this level.

Q. So that we will start from the easterly edge of that and go on?

A. And then we came back on this, which is called the branch of the Drain tunnel.
Q. The Drain tunnel?
A. The Drain tunnel.
Q. On the same level?
A. On the same level.
Q. Going in the Drain tunnel, you take up ore where?
A. We take up ore at 333.
Q. Go on?
A. And drop down to what is called the Davidson tunnel.
Q. Marked in purple. Going down from the Drain tunnel to the Davidson tunnel, what are you in?
A. Ore.
Q. Coming into the Davidson tunnel, go on easterly?
A. We follow it easterly to 414.
Q. Station 414?
A. In ore.
Q. And there is there a break there between the workings?
A. There is a space there without any workings underground that I know of.
Q. About how large a space?
A. About one hundred to one hundred and fifty feet, I should think.
394 Q. Easterly and westerly?
A. Yes, sir.
Q. Then you come into some workings in which I find the Story tunnel.
A. Yes, sir.
Q. State what you have in those workings in the various connections?
A. There is ore all the way through this lower work.
Q. All the way?
A. They are mining it now; that is, coming out to the end where we have eelvation 724.7, and there appears to be another break in the underground workings, but on the surface there is an old cut there.
Q. In that space between elevation number 724.7 where you come to the red level east there are no underground workings?
A. No, sir.
Q. But there are surface cuts between those points?
A. Yes, sir.
Q. And what is in those surface cuts?
A. There has been ore extracted.
Q. Ore extracted. Coming into this red level, what do you call it?
A. 1889.
Q. Level so marked upon this exhibit? Going on easterly there?
A. You follow quartz and iron to that point.
Q. That is from Station 247?
A. 247.
Q. What have you there?

375

A. We had lead ore there and followed that out to the south and came up to a raise to the level above, which is called the Day level.

Q. In which Station 323 is found?

A. 323.

Q. Go on?

A. You can follow over out to Station 28, I think it is.

Q. I don't know whether that is a station number or not?

A. Well, it is 803.

Q. Go on?

A. You can follow ore in that Grain level easterly to 631.

Q. Go on?

A. And then you go up to a raise in the quartzite and strike an ore body, which you can follow out to the mouth of that tunnel. The station number is not given.

Q. But on beyond 181 there is a pitch?

A. In the mountain.

Q. In that near to the Mayberry?

A. No; I was above the Mayberry tunnel.

Q. Now just southerly of what is marked "East drift" and near Station 245 there appears to be a cut there to the surface. Was there ore in that?

A. There is ore.

Q. Then going easterly there is a jump of several hundred feet apparently in which there was no development work?

A. Out to the south there is a section of country here that there is ore in.

395 Q. To what extent?

A. Several hundred.

Q. How continuously?

A. Why, it is in bunches laying all along on this side there.

Q. We have a space here of several hundred feet apparently without any development work; is that true that there is no development work in that space?

A. There is some on the surface.

Q. And will be shown on the surface map?

A. I expect so, but not our work, you understand.

Q. It is beyond our territory now. What is there in the surface work in that vacant space?

A. There was lime with streaks of red oxide of iron in it.

Q. No underground workings?

A. Not that I have ever been in.

Q. Now coming to where you take our workings to the east and thence on to the end of the workings as shown upon this map, state how continuously you are in ore?

A. There is a continuous ore body going out at the extreme west workings of the Telegraph? It is in—

Q. State whether or not these ore bodies and ore tracings that you have testified to are partly within and partly without the lime belt, or wholly within the lime belt?

A. They are wholly within the lime belt.

Q. Are there any places throughout the length that you have

traced easterly and westerly where you of your own knowledge can say whether the ore extends continuously from the footwall quartzite to the hanging quartzite?

A. There is.

Q. How many places?

A. About five or six.

Q. Have you made a memorandum of them so that you can call them off?

A. I have.

Q. Refer to it and call them off and indicate where each one was. I want to ask you to trace it through?

A. In the Carpenter Shop tunnel?

Q. That is the Carpenter Shop tunnel here?

A. Yes.

Q. Marked here "Carpenter tunnel"?

A. Yes.

Q. Where next westerly from that do you trace the ore continuously?

A. In the Grecian Bend.

Q. Where I now hold the pointer and marked "Grecian Bend Tunnel"?

A. Yes, sir.

Q. Where is that?

A. In the Spanish tunnel.

Q. Marked "Spanish tunnel" on BB?

A. Yes, sir.

Q. Where next as you gowest?

A. The Cyanide stope.

Q. Look at that; how is it marked?

A. "Open cut."

Q. That is the tracing at the surface?

A. On the surface.

Q. From the quartzite footwall to the hanging wall?

396 A. Quartzite to quartzite.

Q. Where next?

A. The Compromise stope.

Q. And indicated upon this map as "Compromise stope"?

A. Yes, sir.

Q. In that vicinity you found it from quartzite to quartzite?

A. Yes, sir.

Q. Where next?

A. Lion's Den.

Q. Where is the Lion's Den?

A. West of it.

Q. That is the Dolomite that is to the west of it?

A. Just west of where this tracing is fifty or sixty feet—from seventy-five to one hundred, and east of what is marked "Dolomite stope" you have a tracing from quartzite to quartzite.

Q. Is it here marked?

A. No, not marked.

Q. Where did you go next?

A. That is all that I know of.

Q. Now have you ever been in the Stewart No. 1 mine?

A. Yes, sir.

Q. State whether or not there is any place in that mine where the ore can be traced continuously from quartzite to quartzite?

A. Why, I could not say, Judge, but I have been in the mine and examined it some years ago, but I did not pay particular attention to it. I know there were ore bodies there, extensive, but I did not make any tracings.

Q. You did not endeavor at that time to make any tracings?

A. No, sir.

Q. Are there any places in the ore bodies that you have spoken of and as are displayed upon this Exhibit BB where you can trace ore continuously—I don't mean to confine you to any one level, but going through the workings from one level to another by means of raises and winzes, where you can trace ore continuously diagonally across the vein from quartzite to quartzite?

A. Yes, sir.

Q. I direct your attention now, Mr. Mayberry, to Exhibit T; you have seen this map before?

A. I have.

Q. And are familiar with it?

A. Somewhat, yes, sir.

Q. You see upon it what is marked "Cut A," "Cut B," "Cut C"?

A. Yes, sir.

Q. Are you familiar with those places upon the ground?

A. I am.

Q. Are their extent correctly represented on this map according to your observations?

A. I should think so.

Q. What was in these openings?

A. Carbonate ore.

Q. Is that true of the other places on this same exhibit lying east of cuts B and C and colored in red upon that map?

A. Carbonate ore was taken from those cuts.

397 Q. And are the cuts as represented upon this exhibit correct in point of dimensions?

A. I should judge so.

Q. I call your atention to the place marked on this exhibit "Corner incline," where there appears to be an incline cut to the surface. You are familiar with that?

A. Yes, sir.

Q. What is in that cut at the surface?

A. There is some ore there at the surface.

Q. Are you familiar with Jackson incline?

A. I am.

Q. What does that run through?

A. Lime and ore.

Q. And comes to the surface?

A. In lime and ore.

Q. Here is another line of work called the Rip Van Winkle tun-

nel and the incline apparently going down from that. Are you acquainted with that incline?

A. Yes, sir.

Q. What is it in?

A. Ore.

Q. From top to bottom?

A. Yes, sir.

Q. What is in the cut at the surface? What does it come to at the surface—what material?

A. The incline don't come to the surface.

Q. What have you at the surface in that open cut?

A. Ore.

Q. And then there is another where Station T is found, apparently an open cut and incline from it; are you familiar with that?

A. Yes, sir.

Q. In what material is it?

A. It is ore.

Q. And then another at where Stations S-4 and S-5 are found. Those cuts come to the surface?

A. Yes, sir.

Q. What is that in?

A. Ore.

Q. Taken from it?

A. Taken from it.

Q. S-5, do you know that?

A. Yes, sir.

Q. Anything in that or not?

A. Which one do you mean?

Q. This one?

A. Yes, sir.

Q. What is it?

A. Ore.

Q. Have you been in the Neptune-Kempton tunnel?

A. Yes, sir.

Q. I call your attention to Exhibit R, Mr. Mayberry, and I will ask you if you are familiar with the workings displayed upon that map?

A. Some of them.

Q. Are you familiar with what is marked there "Kempton Lower Tunnel"?

A. Yes, sir.

Q. From end to end?

A. Yes, sir.

Q. What does that tunnel start in at the surface?

A. Quartzite.

Q. How far does it run in quartzite?

A. To about 418.

Q. To where there is a little drift run off to the east?

A. Yes, sir.

Q. There you encounter the contact?

A. Yes, sir.

398 Q. What do you have at the contact?
A. Ore.
Q. How large and wide?
A. Eighteen or twenty inches.
Q. Have you taken samples or a sample from there?
A. I have.
Q. Go on in and describe that tunnel as you go without my asking questions every foot of the way: describe what you have in it, where you encounter the ore, and at what distances, as nearly as you can?
A. I could not call it off from memory, Judge..... But between point 418 and the Sampson fissure there are some sixteen streaks of ore.
Q. I hand you a paper entitled "Neptune Tunnel Ore Streaks in Lime" on a scale of thirty feet to the inch and ask you if that was prepared by you or under your direction?
A. Under my direction.
Q. Is it correct?
A. Yes, sir.
Q. As to all that is represented therein?
A. Yes, sir.

Mr. DICKSON: I offer it in evidence.

(Said paper was marked "Exhibit LL.—J. W. C.")

Q. That is a vertical section taken through this tunnel that you have just been speaking of?
A. Yes, sir.
Q. Take the plan section and refer to that, where you have the distances marked, and tell us what streaks of ore you have and their distances apart and all the dimensions. Call it off as rapidly as you can. That is the first one, is it?
A. That is the first one.
Q. I will ask you one general question: Does this Exhibit LL on the plan section of that tunnel correctly represent the distances between the various ore streaks as marked upon the section?
A. Yes, sir.
Q. Have you taken samples from each one of those ore bodies?
A. Yes, sir.
Q. You have?
A. Yes, sir.
Q. You have them here in court to exhibit, if the gentlemen wish it?
A. Yes, sir.
Q. Did you take from each of them a sample for assay?
A. I did.
Q. How were those samples numbered or marked?
A. They were marked as 1, 2, 3, etc., as the streaks are marked on that map.
Q. The first one would be the one you encounter going into the tunnel?
A. Yes, sir.
Q. And then numbered serially on as far as you go?

A. Yes, sir.
Q. Did you deliver them to anybody for assay?
A. I sent them to Mr. Officer.
399 Q. R. H. Officer of this city, an assayer?
A. Yes, sir.
Q. They were sent in in separate sacks, I take it?
A. Yes, sir.
Q. Each sack contained the number?
A. The number.

Mr. DICKSON: I offer that in evidence.

Mr. HILES: I think that is Mr. Officer's signature. It is all right, and he would swear to it, of course.

(Said paper was marked "Exhibit MM—J. W. C.")

Mr. DICKSON: I will read it off as follows, the first one:

EXHIBIT "MM."

R. H. Officer & Co., Assayers, Salt Lake City.

SALT LAKE CITY, UTAH, *October 21st*, 1902.

United States Mining Co., Salt Lake City, Utah.

GENTLEMEN: We submit herewith, results of assay for Silver, Gold and Lead, on Series of Samples Numbered as follows:

No.	Ozs. Silver.	Ozs. Gold.	% Lead.
1	14.6	0.06	19.7
2	4.8	0.02	5.4
3	10.3	0.14	13.5
4	5.8	0.03	11.5
5	5.7	0.03	7.0
6	6.7	0.03	14.8
7	4.6	0.02	9.3
8	0.8	Trace	0.4
9	2.3	0.01	3.2
10	5.7	0.06	11.4
11	3.5	0.02	3.8
12	2.4	0.02	2.8
13	3.1	0.06	13.8
14	4.1	2.36	11.3
15	7.1	0.09	12.6
16	4.2	0.03	8.7
17	12.6	0.02	9.4

Very truly, R. H. OFFICER & CO.

Filed in U. S. Circuit Court, District of Utah. Oct. 25, 1902. Jerrold R. Letcher, Clerk.

Q. Seventeen, you didn't take that?
A. No, sir.

Q. Do you know where it was taken from?

400 A. It was taken from raises on the footwall in the Neptune tunnel.

Q. Just point it out?

A. These here.

Q. That is 17?

A. Yes, sir.

Q. That is the last one?

A. That is the last one.

Mr. DICKSON: That is 12.6 ounces silver and 0.02 ounces gold and 9.4 per cent. lead.

Q. I will ask you to state if, in your opinion, Mr. Mayberry, that tunnel from where it encounters the contact between the porphyry and the lime and from thence on to its face is in ore?

A. It is in the lode, a part of the lode.

Q. In ore?

A. In the lode and in ore.

Q. Every foot of it?

A. Yes, sir.

Q. As to these samples sent to Mr. Officer, have you a portion of some of the samples to exhibit here, if counsel desire to see them?

A. I have.

Q. You are acquainted with what is shown as the "Purple drift" on this Exhibit R, being branches and workings connected with this tunnel that you have just been speaking about?

A. Yes, sir.

Q. Directing your attention particularly to that portion of that drift which runs westerly from Station 961 to A-17, I wish you would state how the ore in that portion of the level lies as to being conformable to the fissure or in the bedding of the country.

A. It is in the bedding, and the strike of the ore is with the bed, pitching to the north.

Q. Do you know what the strike of the Ashland fissure is?

A. I suppose it is nearly north and south.

Q. Have you been in those tunnels—the Ashland tunnel and the lower tunnel.

A. No, I have not been in those.

Q. But the ore that you find in this Purple level lies with the bed?

A. With the bed.

Q. Have you been in the Turnsheet level marked in red on the map?

A. Yes, sir.

Q. From end to end of it?

A. I think so.

Q. Have you been in that part of it that lies westerly from Station 64 to its westerly face?

A. Yes, sir.

Q. Is that in ore or not?

A. It is.

Q. How does the ore lie with respect to the bedding of the country?
A. It lies with the beds—conforms to the beds.
Q. What is there in the face of it?
A. There is ore.
Q. Have you been up to a raise that goes out from the level of the Ashland upper tunnel at a point between Stations 629 and
401 984 to a raise as shown on this map—have you ever been up there?
A. I could not say; I think not.
Q. Have you been in this part of the Ashland lower tunnel, that is, the most westerly part?
A. No, sir.

Cross-examination.

By Mr. HILES:

Q. Mr. Mayberry, I understand you to have said that from the westerly workings in that country up to the Brooklyn is a distance of two miles?
A. I should judge something like that.
Q. You think that is all in what you call the Jordan lime strata?
A. Yes, sir.
Q. You know, of course, where the Old Telegraph is?
A. Yes, sir.
Q. How far east is that of the Ashland tunnel?
A. I should think that was between five and six thousand feet.
Q. That is over a mile, is it not, from the Ashland tunnel?
A. Yes, sir.
Q. To what you call the head-house of the new tramway which you built?
A. The tramway is down the gulch.
Q. That is down the gulch some distance, but the Old Telegraph is up the gulch from the head-house?
A. Yes, sir.
Q. Now do you think that that Old Telegraph tunnel which runs southwesterly up the gulch is in the Jordan lime?
A. Yes.
Q. Isn't it true that there is a mountain of quartzite lying between the tunnel and the Jordan mine?
A. Which tunnel do you mean?
Q. I mean the tunnel which runs up from the head-house into the Old Telegraph mine?
A. No, sir; that tunnel starts in porphyry.
Q. But there is a mountain between the gulch into which the tunnel extends and the canon which leads up through the Old Jordan and Kempton ground, is there not?
A. Yes, sir.
Q. That is quartzite, is it not?
A. A portion of it is.
Q. Well, it is not lime?

A. It is either quartzite or porphyry. It is the hanging wall of the lime.

Q. And on the south is a band of quartzite?

A. A footwall of quartzite.

Q. Which is the footwall?

A. Yes, sir.

Q. That encloses the Old Telegraph lime, if there is any lime in the Old Telegraph, does it not?

A. Yes, sir.

402 Q. Is it not true that the band of quartzite, which would be the hanging wall of the Old Telegraph mine, is the footwall of the lime in the Old Jordan?

A. No, sir.

Q. You think not. Now, Mr. Mayberry, you have stated that there are five places, as many as five places, where you could trace the ore from quartzite to quartzite between the east end of the Lion's Den stope—is that your statement, sir,—between the east end of the Lion's Den stope and west to the Galena?

A. No, sir, I did not make any such statement.

Q. What was your statement with reference to tracing the ore at the east end of the Telegraph and the Lion's Den?

A. The east end of the Telegraph and the Lion's Den?

Q. Yes, sir; you noted five places?

A. Yes, sir.

Q. Where you could trace the ore from quartzite to quartzite?

A. Yes, sir, trace the ore from quartzite to quartzite.

Q. Any other place?

A. That is all I know of.

Q. All you know of. You never have traced the Ashland fissure?

A. I have told you I was not in it.

Q. You never traced it upon the surface; you said you never were in the tunnel and said you never traced it upon the surface?

A. No, sir.

Q. Then there are three main fissures across this lime, is there not?

A. The lime is all broken up.

Q. I mean fissures across the lime—the bedded lime—from quartzite to quartzite?

A. Yes, sir.

Q. Wherever that fissure occurs you are apt to find ore bodies, are you not?

A. In places.

Q. Are you not likely to find ore wherever that fissure occurs across the beds?

A. Wherever there is a fracture in the lime you will find ore.

Q. Well, that is true enough, but I am asking where there is a fissure extending from quartzite to quartzite, if you are not apt to find ore, that is true, is it not?

A. I say in a fracture in the lime you are liable to find ore.

Q. Answer the question. (Question read.)

A. Yes, you are liable to find ore.

Q. Now, Mr. Mayberry, there is a mine belonging to the United States Mining Company called the Galena mine, is there not?
A. Yes, sir.
Q. How is that located with reference to the Jordan claim?
A. It is north and south.
Q. Across it?
A. Nearly so.
Q. That is located on what is called the Galena fissure, is it not?
A. Yes, sir.
Q. There has been large quantities of ore taken from what is called the Galena mine, has there not?
A. I understand so.
403 Q. And you can say from your knowledge and from your observations of it that it has been extensively mined in days gone by?
A. The maps show considerable work on them.
Q. You have been in the workings considerably?
A. Yes, sir. I worked the mine just a short time.
Q. Is it not true that these excavations which you have just testified to on Exhibit T, as excavations A, B and c and which contain carbonate ores, are near the Galena fissure.
A. I am not positive of that.
Q. Sir?
A. If I could look at the map I would know more about it and could answer more intelligently.
Q. That is it, Mr. Mayberry. Here is cut A, cut B, cut C and cut D; I will add that to my question. I will ask you if those are not near what is called the Galena fissure?
A. The Galena fissure should come in there somewhere. Here is the Galena shaft.
Q. Here is the Galena shaft, and the Galena claim lies across the Jordan in that way, don't it, north and south?
A. Northerly and southerly, I believe.
Q. That is an old patented claim, is it not?
A. I expect so.
Q. It is the oldest?
A. I have not looked up the records.
Q. Don't you know, Mr. Mayberry, that it is an old claim?
A. Why, it is probably one of the oldest in the camp, but I don't know that though.
Q. In what material is this excavation? Is it lime or quartzite?
A. The upper portion of it there is lime. This is quartzite here.
Q. Quartzite below this lime here?
A. Yes, sir.
Q. How is this cut B, is that all in lime?
A. Yes, sir.
Q. And cut C, how is it?
A. Cut C, a portion of it is in lime and a portion is in quartzite.
Q. Is that quartzite beyond?
A. Yes, sir.
Q. And cut D is the same, I imagine, from looking at the map?

A. Yes, sir.

Q. Now you know nothing, of course, about the Ashland fissure. You could not make any comparison between it and the Galena fissure as to size?

A. No, sir.

Q. Now, Mr. Mayberry, those projections on that map would indicate square sets; those of course are not actual square sets and actually mined out?

A. No, sir.

Q. They are imaginary sets?

A. Imaginary sets.

Q. That is all solid ground where those lines are drawn?

A. Yes, sir.

404 Q. Which indicates square sets?

A. Yes, with some excavations.

Q. Can you upon that map show where the Galena fissure is?

A. Here.

Q. These workings here on Exhibit KK are workings which are made in the Galena mine, some of them, are they not?

A. I cannot testify about that; I cannot fix myself on that, but I think there were some workings in here.

Q. They were made on that cross fissure which runs across the Jordan line, of course. Do you know whether there is any bedded vein in the neighborhood of the Galena fissure?

A. I do.

Q. There is a bedded vein?

A. There is.

Q. In the neighborhood of the Galena fissure?

A. I think so.

Q. The bedding planes would show there as well as the fissure planes?

A. The large bodies of ore are all in the bedded vein.

Q. But the fissure vein—the fissure structure would show here as well as the bedded structure, would it not?

A. Where the fissure structure intersects the bed it is destroyed.

Q. You think it is destroyed. Where have you seen it?

A. What fissure?

Q. The Galena fissure I am speaking of—near the Galena fissure?

A. Yes, sir.

Q. And then you have examined the Galena fissure?

A. Yes, sir.

Q. And the underground workings?

A. I have some.

Q. And you say there is no vein structure in the Galena fissure?

A. In the Galena fissure there is a vein filling.

Q. How is it destroyed by the the bedded structure?

A. In the bedded structure where there is an ore body the strike of the ore is east and west and the dip to the north.

Q. Well, is there never any ore vein in the fissure which has a dip with the fissure?

A. Usually there is some slipping planes.

Q. There are slipping planes. There is ore?
A. Yes, sir.
Q. There is ore in the fissure as well as in the bedding planes?
A. Yes, sir.
Q. And that occurs in the Galena fissure, does it not?
A. Which does?
Q. The two structures of which you speak?
A. Occurs in the lime.
Q. Occurs in the lime, of course, but in the fissure as it exists in the lime?
A. Yes, sir.
405 Q. Now between the Galena fissure and the Old Telegraph, I will ask you if there are not other fissures which cut across the lime in the same working?
A. It is possible at the Silver Shield that it does.
Q. From quartzite to quartzite, isn't that true?
A. I don't know.
Q. You don't know that to be true?
A. It should come in there into the lime there, but I don't know of its existence.
Q. Do you know the Condor fissure?
A. I know it on the surface.
Q. You don't know it underground?
A. No.
Q. Do you know the Giant Chief fissure?
A. Yes, sir
Q. Where is that?
A. In the Telegraph.
Q. Does that cut across the lime?
A. I don't know whether it cuts all the way. It cuts into the lime.
Q. There is ore there?
A. Yes, sir.
Q. What is there in the way of a cross fissure at the Cyanide stope you spoke of?
A. There isn't any.
Q. You don't know of any there. At the Emma stope, what is there in the way of a fissure there?
A. There is a local fissure there.
Q. What do you mean by a local fissure?
A. Just a short break there.
Q. A short break in the lime?
A. In the lime and quartzite both.
Q. It extends from the lime into the quartzite, or the quartzite in the lime above?
A. It is just a slip there—a slipping plane.
Q. A slipping plane on the contact?
A. Yes, sir, and the contact has slipped or faulted.
Q. And in both ways the ground is fissured?
A. Yes, sir.
Q. Or broken?
A. Broken.

Q. And there you find ore?
A. And there I find ore.
Q. In considerable quantities?
A. Yes, sir.
Q. Now is it not a fact, Mr. Mayberry, that the size of the ore body and its richness is largely in proportion to the extent of the fracture in the lime and maybe in the quartzite?
A. No, it don't hold good in all cases.
Q. Well, in numerous cases does it hold good, or in any case that you know of?
A. No, I don't know of its being richer there than any other places.
Q. Do you say that the existence of the fissure has any relation to the deposition of ore bodies in the lime?
406 A. I am not capable of going into those details.
Q. You would not undertake to say?
A. I would not undertake to say.
Q. Whether the fissure is an agency which produces ore bodies in the lime?
A. No, sir; I never made a study upon those lines.
Q. And you have no opinion upon that subject? You gave an opinion here that certain territory was a part of the lode?
A. Yes, sir.
Q. But when we come to ask these questions which I asked you, you think yourself not capable of expressing an opinion?
A. I don't know how the ore got there.
Q. I did not ask you that, or at least I was not intending to. I asked you whether in your opinion these cross fissures in the lime—the cross fissure is an agency in the formation of the ore vein which may be contiguous to it?
A If I get this clearly, if that fissure made the ore vein, is that what you asked?
Q. No. I asked you if it assisted in any way, if it is one of the agencies by which the vein was formed?
A. Why, yes, it was one of the agencies, I expect; yes.
Q. You think so. Would you like to say what are the other agencies contributing to the making of the ore?
A. Why, the lime.
Q. The lime?
A. Yes, sir.
Q. Any other?
A. Well, I don't know.
Q. The ore might exist in quartz as well as in lime, might it not?
A. We never found it in large quantities.
Q. And what is the reason of that?
A. I don't know.
Q. In the Kempton tunnel you say you found some ore on the contact?
A. Yes, sir.
Q. Between the lime and the quartz?
A. Quartzite.
Q. Between the lime and the quartzite?

A. Yes, sir.
Q. Is that a recent working, or is it old?
A. An old working, I think.
Q. Worked out many years ago?
A. I expect so—as long as I have known it.
Q. Did they come to the end of the ore there?
A. The ore is going on beyond.
Q. Would it be profitable to follow it? How wide is that streak of ore?
A. It is from six to eighteen inches.
Q. Six to eighteen inches?
A. Yes, sir.
Q. And you think it still goes on, do you?
A. Yes, sir.
Q. In the quartzite of lime?
A. Between.
Q. Between them on the contract?
A. Yes, sir.
Q. But it has been mined many years ago and has been abandoned?
A. Abandoned.
407 Q. Now calling your attention to plaintiff's Exhibit KK, I perceive that the Neptune tunnel and what the defendants have called the west drift are marked in purple upon this plat?
A. Marked in purple, sir.
Q. I see the Neptune tunnel and what the defendants call the west drift on their map is marked in purple upon this map KK?
A. Yes, sir.
Q. Did you ever go through the west drift from Station 863 around to 861?
A. I have.
Q. What is that driven through?
A. Lime.
Q. That is country rock, isn't it?
A. No.
Q. What do you mean when you say lime?
A. Lime.
Q. Do you mean ore?
A. The lime is the vein.
Q. Do you make a distinction between barren limestone and county rock?
A. I make the distinction that the lime in that portion of the country is the vein.
Q. But it is barren limestone, is it not?
A. No, sir; not altogether.
Q. Does it assay?
A. There are places where you can get essays. I say there are places; I am confident you can get assays.
Q. Whereabouts now in that drift from Station 863 do you find ore?
A. I did not make a note of it or make a measurement of it, but

there is ore in severel places along there that there is mineral in the lime.

Q. Let me ask you if it is not a fact, as you go north from Station 861, some distance, about half way, you strike into the lime?

A. Yes, sir.

Q. And out of the ore?

A. Yes, sir.

Q. Do you know this upraise which extends from the west drift?

A. I was not up in that upraise.

Q. You saw it?

A. I saw it.

Q. Can you see whether that is in lime or in quartzite?

A. I can see what the top of it was in.

Q. Can you see what the bottom is in?

A. I think the face of that drift, that little stub there, is in quartzite.

Q. This?

A. Yes. I could not positively say, but I think it was quartzite.

Q. You think it was driven west here in quartzite?

A. Yes, sir, I think so.

Q. And if that was driven west in quartzite this upraise must be in quartzite?

A. Not necessarily. It may be in lime.

Q. That you don't know?

408 A. I don't know; I was not up there.

Q. But you will say, will you not, that from the end of this drift, this west drift, which is the northerly working upon the Kempton mine, that that is in lime to 863?

A. Yes, sir.

Q. It is in lime?

A. Lime—mineralized lime.

Q. Mineralized lime?

A. Yes, sir.

Q. Then it is in ore beyond; it shows it is in ore?

A. There is some ore there.

Q. Would you say that that drift is in ore all the way?

A. No, sir.

Q. Then there may be little fractures in the rock where you find pay ore, is that what you mean?

A. Where you will find mineral.

Q. Suppose you go from that north into the quartzite, what then? You might find ore in that, might you not?

A. If there was a fissure in the quartzite you might; if not, you would not.

Q. So that the lode may be extended into the quartzite, may it not?

A. No.

Q. Why, if you find ore in the quartzite, ain't that in the lode just as well as here in the lime?

A. No, sir.

Q. How do you make the distinction?

A. Because you never find ore in the quartzite unless there is a fissure.

Q. Well, do you find ore in the lime unless there is some fissure?

A. Yes, sir. You will find ore in the lime without a fissure.

Q. Now in this west drift you say that the ore occurs wherever there is a crack in the lime?

A. Yes, sir.

Q. That is, a fissure, is it not?

A. Well, in one sense, and one sense not—a mere crack.

Q. It is a crack? If you find a crack in the quartzite, may you not also find ore in the quartzite?

A. I never have.

Q. Have you never found ore in the quartzite?

A. I have in the fissures.

Q. What is the difference between a fissure and a crack?

A. Well, a fissure usually has a gangue and vein matter connected with it. A crack has nothing, only a fracture in the rock, in my judgment.

Q. Well, that may have gangue too; a little crack may have a gangue, may it not?

A. Some of them.

Q. And then it would be a fissure?

A. It would be a fissure under my version of it.

409 Q. And so, according to your distinction, there is no difference between a crack and a fissure?

A Yes, there is.

Q. Both have gangues?

A. If a crack has a gangue, why it is a fissure; if it has not, it is a crack. That is my way of putting it.

Q. If in going north into the quartzite you find a crack with ore in it, that is a part of the lode, is it not? I am speaking now of the Kempton mine. Suppose you go north into the quartzite and you find a crack there in the quartzite with some ore in it, wouldn't you say that is a part of the lode?

A. I would say it was a fissure you were going on then.

Q. I am asking you if you would not call that a part of the lode if you found ore in it, in the quartzite?

A. No, sir.

Q. You would not?

A. No.

Q. Why?

A. Because I do not consider that the quartzite is lode matter.

Q. Lode matter?

A. No.

Q. Did you never see ore in the quartzite?

A. I have in the fissures.

Q. And then why is it not lode matter? What is a lode, Mr. Mayberry?

A. A lode is vein matter carrying mineral, in my way of putting it.

Q. Then suppose vein matter carrying mineral is inclosed in the quartzite, wouldn't you say that was a lode?

A. Well, if you have the quartzite hanging and a quartzite foot.

Q. Then suppose there is lime in between; which is the lode?

A. The lime.

Q. Suppose then that the fracture or the crack extends into the quartzite; what is it then?

A. A fissure, I suppose.

Q. It is not a lode then?

A. If it cuts the formation.

Q. It changes then from a lode to a fissure? You make a distinction between a lode and a fissure, do you?

A. I do.

Q. Although both of them may carry mineral?

A. Although they may carry mineral.

Q. That is to say now, a lode, in miner's parlance—I am speaking as a miner and not as a scientific man?

A. Yes, certainly, and you are talking to a miner and not a scientific man.

Q. Now if there is a fissure and has in it what you call the gangue and has mineral in it, metalliferous ores, earth and rock, that is not a lode, but it is a fissure?

A. Yes, that is a fissure?

Q. Now then, how do you make the lode?

410 A. A lode is where you have vein matter, which conforms to the strike and dip of the formation lying between the walls.

Q. Well, the gangue in the fissure must conform to the walls, must it not?

A. If it conforms to the fracture.

Q. Conforms to the fracture?

A. Yes.

Q. Don't it conform to the enclosing walls?

A. It does to a certain extent.

Q. Does it not to the fullest extent?

A. Well, Judge, you and I differ a little on fissures. What I claim is a fissure is where the vein is cutting up through the formation, not lying conforming with it.

Q. Of course I have no opinion on the subject at all; I am not differing from you in any way; I am simply questioning you. You say there is a difference, as I understand you, between a lode and a fissure, and I want you to explain to me the difference?

A. I have tried to do that.

Q. You know of course where No. 1 United States tunnel is?

A. Yes, sir.

Q. Whereabouts are the Coolidge stopes that you have mentioned in the evidence with reference to that tunnel?

A. There is where you entered the Coolidge stope from No. 1.

Q. That is at point 638 in what you call the No. 1 west drift?

A. No. 1 west drift.

Q. Where are the Clark stopes?

A. The Clark stopes—this one here, it lays right in there.

Q. That is to say, between Stations 509 and 507?
A. Yes, sir.
Q. 509?
A. Yes, sir, in that direction—in that section.
Q. In that section of country to the north of the tunnel?
A. To the north of the tunnel. The tunnel is in the ore right there.
Q. What is the ore in?
A. The ore is in lime.
Q. Is there any quartzite in that neighborhood?
A. Yes, sir.
Q. Whereabouts?
A. To the north of it.
Q. To the north of what?
A. To the north of the ore.
Q. How there does the quartzite and the ore dip?
A. To the south.
Q. I will ask you if it is not a fact that the ore body extends higher up in the tunnel against the quartzite?
A. It goes up on the dip of the quartzite.
Q. Upon the dip of the quartzite?
A. The quartzite dips up towards the surface there, don't it?
Q. North.
A. To the north, yes.
Mr. DICKSON: Dips to the north, or rises to the north?
411 A. Rises to the north.
Q. Rises to the north and dips to the south?
A. Dips to the south as you go down south, and up to the north.
Q. What is the strike of the quartzite there?
A. Nearly east and west.
Q. You have made examinations for the purpose of determining the strike of it there, have you?
A. Well, this work here shows the strike of it.
Q. You can say that from the work, can you?
A. Yes, because the ore lies upon the quartzite.

Redirect examination.

By Mr. DICKSON:

Q. Have you any explanation to offer of the fact you have just testified to about the quartzite at the point you were being interrogated about rising to the north and dipping to the south?
A. Yes, sir.
Q. How is it accounted for?
A. It is a roll.
Q. A roll in the bed?
A. A roll in the bed.
Q. How do you know that is merely a roll in the bed?
A. I know when you go to the top at the surface here the lime at the Big Emma stope lies on the quartzite dipping to the north.
Q. Following the quartzite?

A. Following the quartzite, and then you follow the quartzite up through this raise, which is on the quartzite foot, to the No. 1 level, and you take the Clark raise there, which is, as you go north, in the quartzite, and follow——

Q. Is this the Clark raise lying in quartzite?

A. It is in here on the quartzite.

Q. You follow the contact up?

A. Follow the contact, which connects over here.

Q. And where is the quartzite with reference to these old workings?

A. Right under them.

Q. And then where did you go?

A. You can come up over the Clark raise from the north quartzite. It conforms just like——

Q. You start in on its normal dip of the quartzite and come into a valley or hollow?

A. A hollow.

Q. And go up over the roll on the contact in ore?

A. Yes, sir.

Q. And down on the normal dip again?

A. Yes, sir.

Q. And it is through that roll that this drift encountered the quartzite that he asked you about?

A. This drift right here; we simply followed the quartzite contact.

412 Q. Along the roll?

A. Along the roll.

Q. You were asked in cross-examination about the Galena fissure. I want to ask you a few questions about it. Have you observed that fissure outside of the limits of this lime belt—the Galena fissure?

A. Yes, sir.

Q. In the quartzite?

A. In the quartzite.

Q. And it has been followed a considerable distance in the quartzite both north and south of the limestone?

A. I don't know as to the north.

Q. Well, a long distance to the south?

A. A long distance to the south.

Q. About what is the width of the Galena fissure where you found it in the quartzite?

A. Why, some places it is not over six inches.

Q. And what would be its average width—or give its extreme width where it is in the quartzite?

A. Well, I have seen it four or five feet.

Q. Now explain why there is any difficulty, as you have stated in cross-examination, in following these north and south fissures and the formation adjoining, as they pass through the limestone belt. Why is it difficult to follow them and to establish their identity? You spoke about them being destroyed in the limestone. What do you mean by that?

A. Well, I mean that in the limestone they do not show as plainly as they do where they are up in the quartzite.

Q. For instance, say one of them came from the quartzite from the south, and entering the lime apparently on the same line, you find it in the quartzite to the north, and you say that there is difficulty in following it through the lime; is that what you mean?

A. I don't know that any of these fissures can be traced to the north of the line.

Q. You have not done so?

A. I have not.

Q. How many veins have you ever known in your life that did not have barren places in them?

A. I never knew any that did not.

Q. You were interrogated about the cracks in the west fissure of the Kempton workings between Stations 969 and 961. I will ask you if those cracks extend to either the hanging or footwall of quartzite, or whether they are apparently confined to the limestone belt?

A. I do not understand your question.

Q. You spoke of small cracks?

A. That is in this point here and here.

Q. There is no station number. Are these the cracks that you spoke of there? You seem to distinguish them from the fissures; why do you distinguish them from the fissures?

413 A. Simply because they were cracks in the lime without any filling.

Q. And are confined to the lime, so far as observed, so far as you can see?

A. All you can see is the edges on that level going through there.

Q. How many of such cracks have you encountered in the lime?

A. At that point?

Q. In general in that lime belt?

A. Why, they are all through it.

Q. They are innumerable?

A. Yes, sir.

Q. You have heard of cross veins and seen cross veins—veins which cross each other?

A. Yes, sir.

Q. In speaking of the fissure then, state whether or not it is your observation that a fissure vein conforms to the bedding of the country, or cuts it as a rule, regardless of its bedding?

A. It cuts the bedding, some of them.

MICHAEL GIBBONS, a witness produced by plaintiff in rebuttal, being first duly sworn, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. What is your full name?

A. Michael Gibbons.

Q. Where do you live?

A. Bingham Canyon.

Q. What is your business?
A. Mining.
Q. How long have you been mining?
A. Since I was a boy.
Q. How long have you mined in Bingham?
A. Since 1874.
Q. Are you acquainted with the Old Jordan mine?
A. Yes, sir.
Q. And the workings called the Kempton workings?
A. Yes; reasonably acquainted with them; I have been through the workings.
Q. For what length easterly and westerly have you followed the lime belt in which the Jordan mine is situated, roughly speaking?
A. Well, from the old Wasatch, as we used to call it or the Miners' Dream claim through to the Old Jordan and in the country between, through the Old Telegraph.
Q. That would be how far in an easterly and westerly direction?
A. I should judge about two miles and a half possibly.
Q. Have you spent any time in examining that mine in the past four or five months, examining the working in the last four or five months?
A. Yes, sir; on the Jordan and the Kempton.
414 Q. Have you formed any opinion as to what constitutes the lode or vein on which the Jordan and Gem are located?
A. Yes, sir.
Q. What in your opinion is it?
A. Limestone.
Q. Bounded by?
A. Quartzite.
Q. What reasons have you as a miner for that conclusion that the lime is the lode?
A. Well, my experience in working on that belt you find that the ore is mixed in the lime out to the quartzite and then back again; makes out to the quartzite hanging wall on its dip and then back again to the quartzite foot wall.
Q. What other reason if any occurs to you without suggestion?
A. Well, it is encased in quartzite on both sides and seems to be the filling of that particular zone or vein.
Q. How far have you been able to trace the ore in the limestone easterly and westerly without interruption?
A. Well, sometimes you can do it for 150 or 200 feet.
Q. And then go to another level?
A. Yes, sir.
Q. And going on?
A. Yes, sir.
Q. I am not of course confining you to any one level but taking all the levels together and their connections, how far have you yourself followed ore in the lime easterly and westerly?
A. In which mines have you reference to?
Q. None of them now. I mean uninterrupted ore, that is to say, you understand, you run on along one level on ore and meet here a

winze which you would go down to another level, or go through a raise along here in ore and then on east or west as the case may be. Now taking the regular workings together, and going from one level to another and where you can go on ore, how far easterly and westerly have you been able to find the ore unbroken in the limestone?

A. As I understood your question you asked me in a general way on the plat; what I mean is are you confining yourself to any part of the mine.

Q. I am confining you to this particular belt of limestone?

A. Oh, the Jordan?

Q. Yes.

A. Oh, no, I could not say; I don't know that I measured up any particular distance, but it was quite an extent along quite a ways. I could not tell you the exact distance.

Q. Could you give an approximation of how far you yourself have followed it, have you made any effort to determine that?

A. No; I did not measure up.

Q. Do you know what is called the Kempton lower tunnel?

Yes, sir.

415 Q. Marked on Exhibit KK as Kempton and Neptune lower tunnel?

A. Yes, sir.

Q. Have you been through that tunnel?

A. Yes, sir.

Q. Did you encounter the contact in the tunnel?

A. Yes, sir.

Q. About how far from its entrance?

A. About 170 feet from the first set of timbers.

Q. Further in after you encounter the contact, in what is that tunnel driven, in your judgment?

A. From the contact?

Q. Yes.

A. In lime and some ores.

Q. Is it in your judgment in or outside of the vein from the time you reach the contact to as far as it has been extended?

A. I should judge it was a vein.

Q. Why would you think so?

A. Well, because in the first place there is ore there and the next place there is lime filling and that I suppose constitutes the vein.

Q. Was that lime that you found in that tunnel and elsewhere in that lime belt different from ordinary lime and look as though it had been changed in any way from pure limestone?

A. Not that I know of, that is you mean in the vein?

Q. Yes; the lime that you say constitutes the vein here, the Jordan vein?

A. Well, it is mixed with ore.

Q. From your experience in the Jordan mine, the workings in it and other workings of other mines on the same lime belt, state whether or not you would expect development work in the lime anywhere to encounter ore, whether it would be reasonable to expect to find ore in such prospect work?

A. Yes, sir.

Q. If you encountered a block of limestone in the belt which was barren so far as certain developments are concerned, headed to a body of considerable extent, would you as a miner leave it stand or would you develop it in the expectation of finding ore in that block?

A. I surely would.

Q. You surely would what?

A. Would expect to develop ore in there in the lime; surely would work it.

Q. You would prospect it for that purpose?

A. Yes, sir.

Q. In the Kempton tunnel where you find these ore streaks there would you as a miner from your knowledge of that mine or that lime belt think it prudent and wise for a miner to follow that in the expectation of leading you to larger ore bodies?

A. Yes.

Q. If you were the owner of that property would you abandon that work without prospecting it?

A. No, sir.

Q. That country, I mean?

A. No, sir.

416 Q. Do you know where a connection has been made within the last few days in what is called the Holden raise to the Sampson level?

A. Yes, sir.

Q. Have you been through the raise?

A. Yes, sir.

Q. What is in it?

A. Well, from the Number 1 level it is in lime, starts in ore and I could not tell very much what it was in because there was such a draft there until we got up to the top of a kind of a chute there and then we got the draft kind of shut off and we could go through then in better shape, but going up a portion of it you could not tell much about it.

Q. Those portions where you could and did observe what was in it?

A. Well, it was in ore.

Q. Have you followed the business of leasing?

A. Yes, sir.

Q. Mines in Bingham?

A. Yes, sir.

Q. And in this lime belt?

A. Yes.

Q. Calling your attention to the Kempton would you as a leaser would you be willing as a business proposition to take a lease on that part of the Kempton tunnel from the foot wall of the contact and in?

A. Yes; I have done work in worse places there where I have been working.

Q. With satisfactory results?

A. Well, yes, some of them, and some of them unsatisfactory.

Mr. HILES: We have no cross examination.

CHARLES BRINK, a witness produced by plaintiff in rebuttal, being first duly sworn, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. What is your name?
A. Charles Brink.
Q. What is your business?
A. Mining.
Q. How long have you followed mining?
A. Since 1871.
Q. Where?
A. Mostly in Bingham.
Q. Do you know the limestone belt upon which the Jordan mine is?
A. Well, I know what I have seen there lately; that is about all. I have not worked there. I know something about it.
Q. Have you ever worked upon any portion of it?
A. I never worked upon it.
Q. Been through the workings, some of them, at least?
A. Yes.
Q. Have you been through what is called the Kempton lower tunnel?
A. Yes, sir.
Q. Have you examined that with care?
A. Yes, sir.
417 Q. Do you know where that tunnel encounters the contact?
A. Yes.
Q. Between the foot wall of quartzite and the lime?
A. Yes, sir.
Q. And from thence in as far as the tunnel has been extended you have examined it, have you?
A. I have, yes, some, and the ore body there that was being taken out.
Q. Now from the place where you encountered the contact as you go into that tunnel, and thence on in to where the larger ore bodies were encountered, state whether or not you as a miner would be willing as a business proposition to take a lease upon that portion of the territory and work it?
A. Yes.
Q. And develop it?
A. There are some streaks I would like to have a lease on.
Q. State whether or not from your observation you could take some of those streaks now and make wages there?
A. Well, it all depends on how high the lode would go, I don't know what it was I would have an assay first.
Q. Suppose it assayed as high as 12 ounces in silver and five per cent lead, would you make wages on it?
A. I think so if I had a contract for the ore.

Cross-examination.

By Mr. HILES:

Q. How much ore would you expect to get out of any of these seams, the ore which you saw in the Kempton tunnel?

A. Where the contact is there is quite a little streak there; I think it will average six or eight inches, from six to eight or ten.

Q. That is an old working is it not?

A. There is a little raise gone up.

Q. It is an old working which has been abandoned for many years.

A. I don't know how long it has been abandoned.

Q. Would you not say Mr. Brink from your observation there and what you saw that it had been abandoned for many years?

A. It might have been. I don't know how long of course.

Q. What is the direction of it that which shows over the drift, over the tunnel?

A. The ore is dipping to the north and that would be running southeasterly I suppose.

Q. Southerly along between the quartzite?

A. And the lime.

Q. You do not know how far that seam would extend?

A. No; only what I could see.

418 Q. All you can see is just what you can see upon the face of it.

A. I can see that it has been raised up for about 30 feet.

Q. You don't know how far it would extend, do you?

A. East or west?

Q. Or upwards or downwards, either way?

A. I don't know. I know you will get up to the surface by and by.

Q. Could you say how many tons of ore you could take out in a day there?

A. In a day?

Q. Yes, sir; there?

A. A man ought to take out a ton and a half a day there.

Q. You don't know how long it would last, do you?

A. Oh, no, I don't know how long.

Q. In taking a lease on it you would be taking some chances of making wages, wouldn't you?

A. Yes, sir; and sometimes leasers have to work for days without wages too.

Q. Many days without wages and they take many chances?

A. Yes.

Mr. HILES: And sometimes he makes money and sometimes he does not; that is all.

By Mr. DICKSON:

Q. You cannot see very far beyond the face of the drift, of course?

A. No; I can't see.

O. A. PALMER, a witness produced by plaintiff, being first duly sworn, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. What is your full name?
A. O. A. Palmer.
Q. What is your business?
A. Mining Engineer.
Q. How long have you followed that profession?
A. About 38 years.
Q. How long in the State of Utah?
A. About 27 or 28 years.
Q. What principal mines in the State of Utah, have you had charge of as mining engineer?
A. In the Ontario and Daly.
Q. How long were you mining engineer in charge of the Ontario; how many years were you mining engineer in charge of the Ontario mine?
A. Let us see; 29 years.
Q. And still are in that position?
A. I am.
Q. State whether or not that is one of the greatest, the greatest in the state, has been in the past?
A. It has been one of the leading, if not the leading mine in the State.
419 Q. And the Daly mine; how long have you been mining engineer in charge of that?
A. Practically ever since it was incorporated.
Q. How many years?
A. Oh, about 15; I think somewhere about that.
Q. These mines are in what is known as the Uintah or Park City mining district?
A. It is in the Uintah Mining District.
Q. At Park City?
A. At Park City.
Q. Have you had charge as mining engineer of any other large and important mines in this State?
A. I was employed on the Eureka Hill mine.
Q. Where is that; in what district?
A. For about twelve or 15 years.
Q. As mining engineer?
A. As mining engineer and directing the underground workings to a great extent.
Q. State whether or not that was a prominent mine?
A. It is one of the prominent mines of the Tintick District, and also the Centennial Eureka; that is a continuation of the Eureka Hill in the same Tintick District.
Q. On the same vein?
A. Same vein.
Q. Were you mining engineer in charge of that?

A. And also of the Gemini for a long time, which is a continuation of the Eureka Hill in the other direction; the same lode.

Q. Are you acquainted with the West Mountain Mining District?

A. Yes, sir.

Q. How long have you been acquainted with that district?

A. Since 1873.

Q. Have you ever been employed as mining engineer in any of the great mines there as consulting mining engineer or otherwise?

A. In several instances I have been employed on this same Old Telegraph and Jordan lodes during a good many years. In 1874 to 1877 I was employed more or less at the time on the Old Telegraph and this same lode. In 1873 in the summer of 1873, I did considerable work in the way of examination and reporting and so on on another portion of the same lode called the Spanish and Black Hawk, and during 1875 I think it was that I did considerable in the way of obtaining a patent on the Kempton on the same lode. Aside from that I have done considerable work on the same lode extending to the east further; the Dalton, Miners' Dream and so on. They are claims still extending further to the east on this same main lode generally known as the Old Telegraph and Jordan lode.

420 Q. While there are many other mines located upon it and worked upon it it is known as the Old Telegraph and Jordan?

A. There are claims located upon this lode throughout its extent, something between two and a half to three miles before it is lost in the depths under the wash of the main Salt Lake Valley. There are other mines on the same lode, called the Revere, the Brooklyn and they are on the same lode situated in between in the operations displayed upon these maps here.

Q. Do you know of any great fault in that lode or great throw at any point?

A. There is one large fault at the extreme west end of the lode.

Q. At the extreme west end?

A. Near the Ashland, near the Ashland claim.

Q. Near which end of it?

A. Well, it is an extensive throw or displacement there; I think I might say a portion of it has been thrown——

Q. Coming to these maps; you are familiar with the Ashland tunnels shown there?

A. Yes, sir.

Q. Do you know where they enter cover, where these tunnels enter cover?

A. Yes, sir.

Q. Where with reference to where these tunnels enter cover is this great throw or fault that you speak of; how near?

A. It lies somewhere slightly to the west. The throw evidently took place before this fissure occurred, and is not now so easily discernible and easily identified as these fissures. It is at some point slightly to the west of them.

Q. Slightly to the west of these tunnels? In what direction was the throw?

A. To the north.

Q. And what was the extent of the throw?

A. The displacement there is in the neighborhood of five to eight hundred feet.

Q. How do you establish to your own satisfaction that that throw has taken place and to the extent that you have mentioned?

A. To the north of the Ashland tunnel there is a mine called the Stewart; there are other claims upon the same reef of lime; I believe it to be the same reef of lime that we have here constituting the Old Jordan and Old Telegraph, Spanish, Black Hawk and so on.

Q. Wait a moment; that is what I want you to explain; what there is observable on the surface that leads you to the conclusion that the belt of lime upon which the Stewart mine is situated is the same belt that the Jordan is situated on?

A. One reason for it is that in tracing the ore in the Stewart mine to the east it terminates at a point nearly opposite to the termination of the Old Jordan as you go in the opposite direction to the
421 west. They there appear one to fit in the other, and one to be thrown from the other, a part originally of the other; and there is the same mineralization and the same general characteristics in one as in the other.

Q. How does the limestone belt upon which the Stewart is located compare in width, strike and dip with the lime belt upon which the Jordan is situated?

A. It agrees substantially in all respects.

Q. What are the inclosing rocks of the limestone belt in which the Stewart mine is found?

A. It has the same quartzite hanging and the same quartzite foot as we find in the Old Jordan.

Q. State whether or not you have formed any opinion from your examinations as to whether or not the limestone belt was mineralized before the throw, before the fault?

A. I believe it to be mineralized before that.

Q. Why?

A. Well, one reason is that the mineralization in every instance is found conformable to the dip and strike and dip of the beds where there is no disturbance in any other direction; it is not destroyed; the structure lines with lime remaining the same, showing only a replacement of the ore and quartz, otherwise no other change than that.

Q. Have you reached any conclusion as to what caused the throw or fault?

A. Well, that is getting back to first principles.

Q. Have you any opinion about it?

A. Yes; I have an opinion. I don't know that it can be proved at all but I have the opinion that it is due to the dropping down of the whole entire west country from the Wasatch Range, and following along what is called the great Wasatch fault, and in fact all of the country between the Wasatch and the Sierra Nevada has undergone a displacement, and in almost every instance there is a tendency to parallelism with the line of the great faulting; and we find here the line of stratification, the strike of it all through practically

parallel with the Great Wasatch fault; and it is believed that all the country between went down at one time, and that the result has been these various mountain ranges, small ranges between, crossing north and south, appear parallel with the line of the great fault.

Q. You made reference to the fact that the Ashland fissure was later than the fault if I understand you correctly?

A. I did.

Q. Why do you say so?

A. The porphyry of which there is a vast amount at the west end of this lode, has evidently come in at the time of the throw, it must necessarily have had time to cool and solidify before the
422 Ashland fissure and all those accompanying it as forming a system of fissures, before they could have fissured through the porphyry which we find they do fissure through.

Q. Now what fissures do you speak of; enumerate some of the fissures that you speak of that you find do cut the porphyry and thus proving that they were later than the porphyry?

A. I do not quite understand that question.

Q. Name some of the principal north and south fissures which you have found cutting the porphyry and thus proving that they were later than the porphyry?

A. The Ashland is one; the South Jordan another; the Live Pine another and that is——

Q. You do not mean the South Jordan, but the South Galena?

A. South Galena I meant. The South Galena and the Live Pine, and while there are others parallel with that system, they are further to the east and I am not sure that they go far enough to the south to cut the continuation of the great belt of porphyry. These three however, are found cutting the porphyry, cutting the quartzite, and cutting the lime.

Q. Do you know one called the Giant Chief?

A. Giant Chief?

Q. Have you traced that to see whether it cut the formation generally?

A. I do not remember the Giant Chief.

Q. Do you know one called the Condor fissure?

A. I know the Condor; that cuts through the quartzite and the lime, and as that goes to the south up the hill I think that that cuts probably the continuation of that porphyry, but it is further away from our Jordan lode than these other fissures that I speak of; that is, the porphyry is further away and I am not so sure; but I think up the hill it probably cuts the porphyry too.

Q. Do you know any portion, any considerable stretch upon the strike of this limestone belt easterly and westerly that is mineralized and yet is not cut by any of the north and south fissures so far as you have been able to discover?

A. One or two notable instances, one of the Black Hawk and Spanish; that I think is. That is shown about here. That is between the old Telegraph mine and the Jordan proper. There is a stretch of probably a thousand feet to 1200 in length along the lime belt in which I have not found any of these north and south

fissures cutting through; and throughout that distance it is mineralized practically from wall to wall; that is from quartzite to quartzite and no disturbing fissures within that upon either side of it; In some places there may be disturbing fissures but in that instance I have found none. Now at the other end.

Q. What do you mean by the other end?

423 A. Well, toward the east and from the No you don't discovery.

Q. Point it out?

A. I think it is here; I can't quite see.

Q. It is out about this point called the No you don't discovery or the Nezpercies, which is practically at this point there.

Q. It is marked on this map Ex. BB?

A. From that point passing to the west probably for 1500 feet, there is no north and south fissure cutting it as far as I have been able to find; throughout that entire distance it is strongly mineralized containing some of the largest ore deposits that have ever been found in the world, and practically mineralized from the hanging quartzite to the foot quartzite.

Q. Have you been able to discover any features on the surface or in the workings beneath from which you have been or are able to conclude whether or not the north and south fissures which cut the country generally are later or younger than the lime belt vein?

A. They are evidently younger from the fact that they are the cutting fissures, they have cut and disturbed the lime lode; they must have been later, or the other would have cut them and thrown them. The other disturbance has been slight, in many instances, in some instances 15 or 20 feet, and perhaps one instance eight or ten feet in which there has been a slight displacement, but hardly perceptible, except in following very critically the foot wall during this action but in the heart of the lode it is impossible to detect them when you have a fissure of eight or ten feet in the lime belt which is 150 feet wide; it is hardly perceptible except along the line of either the hanging or foot wall.

Q. Now what I want to get at a little more specifically is whether there is anything which enables you to say whether or not that faulting that you have spoken of is later than the mineralization of the lime belt?

A. Well the mineralization of the lime belt is in all instances, or nearly all, conformable to the strike of the bed, and the strike of the ore body, are conformable to the strike of the lime beds, which is largely a replacement of the lime.

Q. Explain that?

A. Well, in the fissures what little occurrence of ore there is is found to be following the direction of the throw parallel with the walls of those narrow veins.

Q. And what would that indicate?

A. It would indicate a later deposition than that in the lime belt.

424 Q. Might it be explained by a dragging, what is called a dragging along the line of the throw?

A. In some instances there is a dragging of ore, but not in every instance. In some instances the disturbance has been so slight as to give a very little dragging of the ore.

Q. I wish you would explain briefly what you mean by the dragging of ore in the fault?

A. That is where a fissure crosses a large body of ore and throws it, the tendency is to crush the ore somewhat and drag it along in the line of movement, and drag it along into the fissure on which the movement takes place.

Q. Without stopping to point out the places, have you found any such instances in this lime belt?

A. In some instances there are.

Q. Now explain what you mean by replacement?

A. Where the lime has been destroyed and replaced with quartz or ore.

Q. How destroyed, by what process or agency?

A. By a destruction of the lime by the escape of the carbonic acid in the lime and the replacement of it atom by atom with quartz. That is found throughout the entire length of the lode as a very strong evidence of the mineralization. There is of course in the lode quartz which has not come in by that method which is called chert, which is probably silica, which was prevalent at the time of the deposition of the lime belts and before mineralization.

Q. Has there been a replacement of the lime in this lode that you are speaking of with ore as well as with silica?

A. Both, and in very many places the replacement has been very slow and very perfect and has left undisturbed the original structure lines of the limestone.

Q. Notwithstanding it is now all ore?

A. Notwithstanding it is now all ore as you trace through the original structure lines of the line and find it as originally laid down.

Q. How does that process of replacement of the limestone with ore or quartz compare with the process of petrification of wood?

A. It is the same principle.

Q. Now these north and south fissures you have spoken of and undertaken to follow and finding them cutting the country generally, can you—we will take the Ashland first—state to the court what its dimensions are outside of where it cuts the lime belt, its width?

A. It is very narrow where it cuts through the quartzite.

Q. What do you mean by very narrow?

A. Well, it is not to exceed a foot or two wide in places it is even closer or tighter than that in the porphyry as its cuts through the porphyry it is also very narrow, not over two or three feet
425 probably at the very outside; also in the quartzite very narrow. In the lime it is wider. In the lime it is cutting through ore bodies originally existing and that through a section of country that had been more or less crushed prior to these fissures, and it is very difficult to trace it through the lime. In other words it is lost in the great body of crushed lime which has been mineralized and almost all converted into ore.

Q. The lime is a more friable rock than the quartzite?

A. Yes, sir; and probably underwent a great deal more crushing than the quartzite in the original tipping up or tilting up of the beds. There has been a good deal of movement in the lime beds in the line of the bedding. In the tilting up of the beds there is a downward movement down along the line of bedding which has tended to crush it somewhat. That seems to have taken place where there is little evidence of it in the quartzite beds which alterate with the lime belts.

Q. To what extent has this lime belt that we are particularly interested in been crushed, broken and altered?

A. They are extensively so; it is extensively crushed, and while the lines of crushing run in almost all and any directions with the exception of the transverse fissure, they all terminate on either the foot or the hanging quartzite and do not penetrate it; but the principal lines of crushing and movement in the limestone has been along the line of the bedding.

Q. Parallel?

A. Parallel with the bedding; in fact it has been in the sense of strata fissures where the fissure has been made simply by the movement along the line of bedding, one body moving upon the other and by so doing created a fissure, but in that sense it is a strata fissure running parallel with the beds and with the bounding quartzite on either side.

Q. To what extent within the limits of this lime belt, so far as you have explored it easterly and westerly, do you find the stratification of the lime still prescribed or observable, or in other words unaltered?

A. In very few instances, the alteration having been so complete it has been very difficut to detect the dip or rather the stratification, in fact the only places in which you can detect it, is where there is less mineralization, and found in portions of the lode where there is the least disturbance and less mineralization, and there you will find the bedding planes a little plainer, but they are entirely obliterated where there has been any extensive vein action.

Q. Do you find that the lime belt has been altered in any other way than by this mechanical breaking and fracturing and folding?

426 A. Only in the replacement of it by silica and by ore.

Q. You stated in speaking of these north and south fissures being wider in the lime that in some places they had cut through preexisting ore bodies; why do you say that; what evidences are there of it?

A. Why do I say they are wider?

Q. Why do you say that they cut through pre-existing ore bodies in the limestone?

A. Because I find these ore bodies thrown the same as I find the foot and hanging boundaries displaced; there is the same evidence throughout the heart of the lode that there is on the boundaries and sides.

Q. How do the ore bodies in this lime belt, speaking generally, lie with respect to the bedding of the country?

A. Generally conformable to it.

Q. In both strike and dip?

A. Strike and dip not always but generally speaking it is plainer with the strike than with the dip for in many instances where the lime had been eaten out, the ore is deposited somewhat irregularly, but as a rule they will follow the strike of the bed very clearly but with the dip they vary a little more and not be quite conformable to it; so that sometimes you run from one limiting boundary of the lode across to the other diagonally through the beds always terminating however, upon one or the other of the boundaries.

Q. I invite your attention Mr. Palmer to plaintiff's exhibit T; have you seen that map before?

A. I have.

Q. And you know what it is intended to represent?

A. It is intended to represent——

Q. Well, I just ask you the question, do you know?

A. Oh, yes.

Q. I wish you would in your own way without being interrogated by me and thereby save time, make any comments that you wish to make upon the features displayed upon that map? Did you hear my question?

A. I thought I had answered it. I was not paying attention.

Q. Without waiting for any questions from me, go to that surface map and point out to the Court all the features that you think are salient features in their bearing upon this case—not all the little details?

A. This map is intended to represent the surface only, practically the surface, now and then with an opening to the underground workings, but principally the outcrop of the lode at the surface and the various cuts shown at the surface in which mineral has been found. A portion of the cuts as you will see, are not colored, which simply shows that that portion of the cut lies beyond the
427 limits of the lode and out into the quartzite. That which is colored shows surface openings in ore. The blue color is intended to represent the limit of the beds as they cut the irregular surface of the hill. In other words the outcropping of these walls, hanging and foot, and it ought to show the relation to some extent at least of the located claims upon it.

Q. Have you been through or have you observed and examined what is called the surface tracing of the Kempton vein?

A. Tracing?

Q. No the apex of what is called the Kempton vein?

A. What is the claim?

Q. What is called by the other side the Kempton vein?

A. Oh, the Kempton vein; Now I understand you. Well, there is a portion of that shown here. That is represented in the tracing from near the head of the Jackson incline through the various cuts as I now indicate it with the pointer and in this direction, that is it, and continuing on through here. That is the tracing at the surface.

Q. Now have you examined the surface of the lime belt southerly from that tracing towards the quartzite foot wall?

A. Yes.

Q. Have you formed from that examination and your knowledge

of the underground workings throughout the mine on this limestone belt any opinion as to whether or not what is called the Kempton vein by the defendant here is a separate and distinct vein, or whether it is a part of one and the same vein which you call the lime belt vein?

A. It is one and the same with the lime lode; it is a part, a fragment of the lime lode.

Q. Why do you say so? from the surface indications?

A. Because the mineralization of the lime here is found here and there throughout the lime belt until you find it terminating again upon the foot.

Q. Upon the foot wall quartzite?

A. Now that is clearly shown in the——

Q. Kempton tunnel.

—. In the Kempton tunnel. The Kempton tunnel starts in quartzite and you come to the beginning of the lime belt and the beginning of the lode at this short drift—you see what I am pointing at now. From there through it is all in the lode and running parallel with the structure of the country. From this point on we have occurring a series of fissures crossing nearly at right angles with the tunnel, running of course somewhat, practically with the lime belt, with the bedding of the limestone belt. These fissures will range from two to four inches wide and every one of them is mineralized; ore in every one of them, all the lime in between.
428 Now while they are particularly marked off here, the lime beds in between are often mineralized, so that there is a mineralization and veinification all the way across from the foot to the hanging.

Q. In that tunnel at any time from where you encounter the contact clear through as far as it has been driven, do you find any unaltered limestone?

A. None.

Q. State whether the alterations as cut by that tunnel has been much or little, extensive or light?

A. The alterations are very extensive.

Q. Have you been through the workings marked here in purple upon Exhibit R from station 961 to its westerly face?

A. I have.

Q. Did you find ore there?

A. It is ore all the way.

Q. How does that ore as cut by that line of working conform to the bedding of the country?

A. It conforms to the dip and strike of the lime beds of the lime lode.

Q. Do you find any ore in there on that line of work which you can distinguish as being within the walls or limits of a fissure?

A. How is that.

Q. Do you find in that line of work any ore that you can distinguish as being referable to the fissure and lying in the fissure?

A. No.

Q. Is that true also of this yellow level?

A. That is true of the intermediate level colored yellow. It is an ore body continuous and unbroken from end to end.

Q. How is it on the red level, on this exhibit from end to end where it is ore?

A. There is more or less ore in that. There was a large body found at this point at the extreme east end of it and along to near the line of the Ashland side line there is more or less ore. A portion of the same red level is shown——

Q. I do not care to take time to go into the details now. I will ask you the general question as to all of the ore which you do find in that red level. What do you say as to whether it is ore in the bed vein or in the fissure?

A. The ore lies in a strata that is parallel with the hanging and foot of the mineralized lime belt.

Q. You do know what is called the Sampson fissure, I take it?

A. I think so.

Q. Have you made any effort to determine whether that Sampson fissure extends into the foot wall of quartzite or terminates in the lime?

A. I take this to be the Sampson fissure if I remember right that is not found in the hanging quartzite I am a little in doubt as to whether that is the Sampson fissure.

Q. That is the Sampson fissure?

A. That or this?

Q. This is the Sampson fissure?

429 A. That is the Sampson fissure I think. I first thought it was another. No I have not been able to find that fissure making into the hanging country any where.

Q. Have you found it making into the foot country?

A. No; I have not; as far as we have it here it terminates, comes to the surface in lime.

Q. I call your attention to a piece of work running westerly from station 629 to its face in ore is it not. You have been through there?

A. There is a stope raised up on it.

Q. On this incline?

A. Incline.

Q. At station 624 and 629; you have been up that?

A. Yes.

Q. To here in that level and upraise both?

A. Both.

Q. Is that in the fissure or in the lime beds?

A. In the beds.

Q. You have gone through the Ashland tunnel, upper and lower tunnel?

A. I have.

Q. And through the workings displayed on this map?

A. I have.

Q. And in the Stewart No. 1; have you been in that?

A. I have.

Q. To what extent does the ore extend in that mine in the lime belt northerly and southerly?

A. The lime in the Stewart No. 1 is conformable to the dip and strike of the lime beds, and in fact, in places, there are no lime beds left, the alteration has been so complete, but the structure of the original lime beds has been preserved just the same.

Q. In the ore body?

A. So that you find in the ore bodies in the quartz the structure of the original lime beds which the quartz took the place of.

Q. To what extent did the continuous ore extend as you went from the quartzite toward the foot wall, as you went from the foot wall to the hanging quartzite?

A. Mineralized from one boundary to the other. Some of the largest ore bodies that have been taken out in that section have been taken out of that portion of the Jordan lode thrown to the north.

Q. Coming to this Exhibit BB I call your attention to ore along the Sampson fissure; have you ever undertaken to follow the ore easterly from that on the strike of the vein?

A. Near station 23 on the 100 level there is an ore body following the strike of the bed, running easterly, so that without any serious trouble you can follow on ore all the way through it to the open cuts.

Q. Without interruption?

430 A. Of course it is very irregular up and down and around; of course you do not have to do it in merely following the veinification, but if you want shipping ore, high grade ore, why this irregular route would take you through it.

Q. Through shipping ore all the way?

A. All the way; but the mineral vein or lode of lime is clearly shown through here. That is simply a route by which you can get high grade ore alone.

Q. Have you been to the mine since the connection was made through what is called the Holden raise with the ore in what is called the Sampson fissure since that connection was made?

A. No; I was through it when it lacked about 30 feet of being connected.

Q. What did you have in the top of it?

A. Ore.

Q. And what did you have in the bottom?

A. Ore.

Recess until 2 P. M.

Q. I call your attention Mr. Palmer to Exhibit S, the map now before you, and first I wish to direct your attention to No. 1 level, starting off to the south from nearly opposite to station 892 and running southerly past elevations 1022.7 and others around to the face of that working; do you recognize that place?

A. I do.

Q. State whether or not you have ore there?

A. There is ore on the quartzite contact lying along this crooked curved drift nearly conformable to it, and then following this straighter drift near the east end of it, the contact passes out on this side; a little lime and quartzite on that side appears.

Q. To what extent have you ore along there on the quartzite contact?

A. There is ore throughout the distance from the main level to the south and also mostly through these drifts.

Q. Now directing your attention to the work upon the same level in the vicinity of where stations 876 and 793 are found, have you ore there?

A. There is ore along there, and also here going down the incline.

Q. The incline marked No. 1 B?

A. No. 1b is the station, that ore occurred. As far down that incline as I went, as far as that vertical shaft—the vertical shaft was at the station marked No. 1b with full black marks.

Q. That ore body according to the map and your testimony lies partly under the Fairview and partly under the Northern light?

431 A. Yes; but it is on the dip of the Jordan lime, on the dip of the lime lode, and the fact it appears so here is simply that to the east of the Jordan lime is what is called the Commercial lime.

Q. The ore that you have here at the place we have last referred to is in the limestone?

A. It is in the limestone; in the Jordan limestone.

Q. Is it conformable there or not to the strike and dip of the bedding?

A. Well, it may not there fully conform to the strike and dip but as nearly so as the most of it. There are places where there are some twists in the rock, where there is a folding of the leaves of limestone and the quartzite bodies and then there will be some variation of course from the normal dip and strike.

Q. The ore that you had at the first place I called attention to this forenoon, how does that lie with reference to being in the fissure or in the bed?

A. In the bed.

Q. And while we are at it, can you give me the difference in elevation between the Kempton West drift and that level where you have ore at the elevation of 1023, the difference in elevation?

A. I can give it here; one is 1172 and the other is 1023.

Q. Have you observed in your examinations of the underground workings at intervals what you call a roll in the foot wall of quartzite?

A. There is.

Q. Have you made a sketch during the noon hour to illustrate that?

A. Yes; a small sketch, that would illustrate in a way the folding (Produces sketch). That illustrates it.

Q. Just explain it?

A. —the form of the fold, the yellow color indicating the quartzite above and below the lime; the blue indicating the lime.

Q. One question I wish to ask you in connection with it is this: State in following the foot wall of quartzite from a point here near the surface down over the roll how continuously you follow ore along the contact?

A. Practically all the way to the bottom of the Clark incline, what we call the north Clark incline. There are two inclines, the north and south Clark incline; one rises on east side of the fold.

(Paper marked Exhibit NN for identification.

Q. I wish you would state how abruptly in this lime belt that you have spoken of you can pass from merchantable ore into altered lime for commercial purposes which has no value?

432 A. At what point that could be done?

Q. No, no Anywhere; how abruptly any place?

A. Well, it is not abruptly; it is a fading out of the mineralization, a fading out from the richer bodies to the poorer.

Q. Coming here Mr. Palmer to Exhibit KK, do you recognize the No. 1 level as I hold my ruler now, and its branches lying to the north, do you recognize the ore bodies represented there called the Coolidge?

A. The roll passes along through to the middle of that.

Q. Now this level on its main course from station 538 to 637, is that level in the ore or above the ore or below that ore?

A. That is above the ore.

Q. How far above the ore about?

A. Oh, may be 20 feet above it.

Q. What is the level it is driven in?

A. That passes through just above the trough of the roll.

Q. And what is the material in which the level itself is driven?

A. In lime.

Q. What kind of lime?

A. Mineralized lime but not the big body.

Q. Referring to Exhibit S I want to ask you a question or two about the ore bodies in the vicinity of what is known as the Galena fissure. I will ask you to state whether these ore bodies are conformable to the dip and strike of the fissure or the beds?

A. They are conformable to the strike of the fissures and throughout the ore bodies wherever there are cross cuts there is the original structure of the lime just as clear as if there had been no disturbance whatever.

Q. What do you mean by saying that they are conformable to the fissure?

A. The ore bodies and structure is conformable to, the strike of the bed.

Q. You said conformable to the fissure; did you mean that?

A. Did I say that? Well, I mean beds of the lime country rock.

Q. Now suppose you had an existing ore body conformable in its strike and dip to the strike and dip of the beds and we will say that that ore body had a vertical height of 30 or 40 feet and subsequently it was cut through by a band or fissures, what appearance what effect would that have upon the appearance of the ore body?

A. That appearance might not always be alike; it might differ in different instances. In this instance there is a lining, sort of, to these fissures, slickensides that go up and down with the fissures and a plating so to speak, of a few inches wide; when you get beyond

them and cross cut through the drifts you will find the structure parallel with the dip and strike of the strata undisturbed.
433 The disturbances wherever the fissures pass through it are very slight, only a few inches wide that there is any appreciable effect due to the fissure.

Q. Did you discover anywhere any evidences of this limestone vein having been enriched where cut by the north and south fissures?

A. There is no evidence of any enrichment. In the majority of the cases where we have large ore bodies speaking now of the lode throughout, its entire length between two or three miles, in most of the places where we have these largest ore bodies, we have no transverse fissures at all, sometimes a thousand or fifteen hundred feet I have known of having no transverse fissures and yet there are frequently rich ore bodies.

Q. To what depth in any mine that you know of on the Jordan limestone belt has ore been followed in the lime between the quartzite?

A. In the Brooklyn in the neighborhood of 1500 feet following the beds; in the Dalton and Lark between eight and nine hundred feet that I have seen, I think deeper now but I have only seen it to that depth.

Q. Is there ore in the Jordan United States Company's workings within the limits of the deepest levels yet reached?

A. There is still ore at the bottom.

Q. I wish you would step to Exhibit T for a moment. Have you undertaken to trace upon the surface the Ashland fissure?

A. Have I undertaken to trace it upon the surface?

Q. Yes.

A. Yes, sir.

Q. I wish you would commence at the most southerly limit where you find it upon the surface and trace it northerly on this Exhibit; commence at either end, whichever is most convenient using a red pencil, on the surface I mean. (Witness makes mark on the map.)

A. I cannot find some of these points; some of these caves I did not notice. That is approximately the position of it at the surface.

Q. And it is only intended to be approximate?

A. It is only intended to be approximate; not put down to a scale at all.

Cross-examination.

By Mr. HILES:

Q. Mr. Palmer you have testified in a good many mining cases before this in years past?

A. Yes, sir.

Q. You have known this country, this west Mountain mining district for many years?

A. Yes, sir I have.

Q. When do you say you first knew of this Jordan limestone belt?

A. I think it was June, 1873; I could tell exactly by records in

the Surveyor General's office but I think it was that time, the
434 month of June 1873. That was the first time I went on to the lode; I was then at the Spanish and Black Hawk. It was for the purpose of examining the ground and mapping it for the then owners.

Q. Now what is the general width of the Jordan lime?

A. The general dip is northerly.

Q. The general width I say?

A. The general width is about 150 feet.

Q. Are there other lime belts in the West Mountain Mining district?

A. There are a series of them.

Q. How do they compare in width with those of the Jordan belt?

A. Some of them are about the same width; others are narrower. There are three; two wide belts, one running through the Jordan, through the Old Telegraph and down in the Wasatch mine, Miner's dream and other. Now above that at that east end of the belt, above that lies what is called the Dalton lode——

Q. I was not talking about that; I was asking generally about the relative width of the others with the Jordan lode?

A. I was just coming now to that. That is about 25 feet called the Dalton lime. Now above that is what is called the Lead mine and the Richmond at that east end, that is what would be called the Commercial lime. At the west end we had another——

Q. How wide is it?

A. That I should judge was not less than 150 feet between that and perhaps 200; but I would say 150 is probably very close to the truth.

Q. What is the widest belt you know of in the district?

A. These two are the widest mineralized belts I know of in the district.

Q. I am asking you about limestone belts?

A. I am answering. I say these are the two widest in the district.

Q. There may be a lime belt which is not mineralized?

A. It is very possible, oh, yes.

Q. You have been in the Eureka mining district in this State?

A. I have.

Q. There is a belt of lime there two miles wide, is there not?

A. Well, I don't know; practically that wide, very wide; near enough.

Q. Is that mineralized from quartzite to quartzite?

A. No; that is not.

Q. That is not?

A. That is not mineralized from limit to limit nor——

Q. That has many metalliferous veins in it?

435 A. There are separate and distinct ones.

Q. There are in that limestone distinct and separate mineralized veins?

A. Yes, sir, and some of them are a mile or a mile and a half apart.

Q. Now you have spoken of a series of fissures in this which you call the Jordan lime from the Brooklyn west to the Ashland. You

have spoken of a series of fissures crossing the lime from the Brooklyn to the Ashland upon the west?

A. A series of north and south fissures, yes, sir.

Q. Some of them extend from quartzite to quartzite?

A. They do.

Q. And then there are some fissures and cracks which do not extend from quartzite to quartzite?

A. There are some of them that go further, go beyond the quartzite into the porphyry.

Q. And is it not a fact that you find fissures in that district which go from quartzite to quartzite and then from the quartzite into lime and then into quartzite again?

A. Yes, sir.

Q. Through and across the several bedding planes?

A. Through the several series of beds.

Q. Through the several beds of quartzite and lime?

A. Of quartzite and lime.

Q. Now you have said that the Ashland fissure occurred after the mineralization; how is that that it occurs after the mineralization?

A. After the mineralization of the lime bed.

Q. How is it as to the Galena, as to the priority of the mineralization?

A. The lime, the mineralizing of the lime belt was probably the first in the series of mineralizations. The cross fissures have dislocated and moved the blocks one upon the other, which would be anywhere from six to thirty feet and these fissures which extend through into the porphyry beyond the Jordan line and in the porphyry are mineralized, in the quartzite very seldom which are very tight, but as they pass through the lime, why it is difficult to identify them, to locate them; they necessarily are through ore——

Q. You misunderstand my question. I asked you the specific question as to the Galena fissure. You know where the Galena fissure is?

A. I do.

Q. Well was the mineralization before the Galena fissure or after the Galena fissure in that case?

A. The mineralization of the lime belt?

Q. Yes, sir?

A. I think that was before the——

Q. The Galena fissure?

436 A. Before the existence of any of these north and south fissures, the Galena fissure included of course as that is one of the system.

Q. And every fissure that you have mentioned?

A. Yes, sir.

Q. And the North and south fissures have occurred after the mineralizing of the lime?

A. Of the lime; I think so, yes.

Q. Now did you examine the Ashland fissure carefully underground?

A. I did.

Q. From what point did you proceed to make your investigation?

A. From the mouth of the old Air tunnel, passing through the lower tunnel, then the upper tunnel, the two tunnels that are laid upon the map, and then an old tunnel partly filled lying above it, and then there is still another tunnel above that, and it was traced by some work that you have done through there on over the hill, and stripping upon the ground, upon the surface.

Q. Does that show the fissure, that stripping upon the surface?

A. Some of it does; I don't know that it all does because there is sometimes fissure but I think some of it shows a fissure.

Q. Did you observe where the fissure comes through the quartzite at the top of Jordan Hill?

A. I did.

Q. And that is on the line of the stripping?

A. Yes, sir.

Q. On the same line?

A. Generally in line with the stripping?

Q. Now coming back here underground, as you get to station 986 in the lower Ashland tunnel, you are on the fissure are you not?

A. Yes, sir.

Q. Now I will ask you if at that point the ore body commences?

A. The ore body?

Q. The ore body that is the subject of this controversy?

A. Connected with the ore body at about that point.

Q. Now did you observe any displacement there at the point where it connects with the ore body in the crushing of the material inside of the fissure?

A. I do not know that I marked especially the point nor the amount of displacement. It is better observed in other places.

Q. But I am asking you about this point where it commences to make out and widen out into ore?

A. From all I did notice, it was simply laying with the ore which connected. The appearance of it was that it was different from the strike where it connected with it.

Q. You did not examine for the purpose of seeing whether there had been any displacement or crushing of the ore, or whether
437 there had been any chasm made in the ore body by this subsequent fissure—did not examine for that, did you?

A. I examined generally, not to determine the amount of displacement, because that had been determined at other points where it was clearer and more distinct. In order to get these questions of displacement it is always better down where the ore bodies are thinnest and leanest. There you can get at it easier. I would not undertake to determine it in the mass of a large ore body.

Q. When you wish to determine that a fissure is subsequent to the replacement or placement of an ore vein you go outside of the ore vein for the purpose of determining the question?

A. The amount, yes.

Q. The question of whether the fissure is subsequent to the placing of the ore vein, is that the way you do it?

A. As I say, that is the best place to obtain it always, not where

the ore bodies are the largest and richest, but where they are the poorest and leanest. There you will get the amount of the displacement clear and plain, but there is no mixture and no mingling where the ore bodies are largest, where the crushing has been greatest in the first instance before the transverse fissures occurred; but at that point the ores are trending east and west parallel with the stratification, and after connecting with them we have turned and run a drift some twenty-five or thirty feet to the west on the ore, finding ore there coursing with the stratification east and west.

Q. Yes, that would naturally be so if the ore was placed there before the fissure, but what I am inquiring about is whether you find any chasm in through that large ore body, showing where the ore body has been split by the subsequent fissure of the earth?

A. I did not look for it there, for the reason that it had been determined at other points.

Q. The fact is it is not there—isn't that the fact?

A. I don't know that it is not there. I say that I determined that question, but I did not determine it at that point. I took the best point to determine it.

Q. You determined it?

A. Having determined it once, I assumed it to be constant clear through, as it undoubtedly must be.

Q. You determined the conditions of the earth's crust at that point by its condition at this point, do you?

A. Yes, and where the fissure is continuous, where you have obtained the truth at one point, you obtain it for the whole. These formations are all comformable. When you have determined the amount of throw upon one, it is not necessary to dig it out
438 again, or in more than one place. All the others must be constant; they are all comformable and parallel, and when there is a throw and you have determined it at one point, it is constant throughout that fissure.

Q. Is it not a fact, Mr. Palmer, that the earth's crust changes in contour and in geologic structure from mile to mile?

A. Yes, but not——

Q. And in chemical composition also?

A. That is possible, but while that is true for miles and miles, it is not apt to be true from one end of it to the other.

Q. Is it not true that from one end of it to the other you will find the strata of the earth tilted up at all angles, and flexed, and distorted in many varieties of position?

A. Far more so than you would for a mile away from it?

Q. Yes.

A. There are local occurrences of that kind which would not be perceptible perhaps for a mile away.

Q. So that it is according to just principles to determine whether an ore vein has been split by a fissure by going outside of the ore vein?

A. Oh, yes.

Q. It is?

A. Absolutely legitimate.

Q. You are a scientific man; you have studied the science of geology, have you?

A. Yes, and with the common sense necessary in following my business.

Q. Have you ever heard of the deposition of ore veins by what is called the metasomatic process or metasomatosis?

A. A changing or replacement atom by atom.

Q. That process occurs through the lime?

A. Through the lime * * * I say, through this lime body, which is a lode, this same process that you speak of is found there throughout it. You will find what has originally been a cherty limestone containing chert that existed when the sediment was laid down and formed as a stratification or as a stratified deposit in the first place, you will find that the lime has been completely changed and altered until there is nothing but quartz left. The silica there is in two forms, first as a chert, and afterwards as a replacement, and you can readily distinguish between the two. One is laid down with the lime and the other is not; the other is a replacement since the sediments were laid down.

Q. Now in the case where this molecular change of which you have spoken, a replacement of the lime atoms by the mineral atoms, that is metasomatic?

A. It is.

Q. That process is of aqueous derivation, I suppose?

A. That is the result of surface waters seeping down and meeting probably the waters that are forced up from below;
439 the waters to the deep meet and circulate with the surface waters. That seeping through is probably the cause of the change.

Q. These waters are heated and may be charged with carbonic acid?

A. Yes.

Q. They eat out the lime and——

A. And leave the matter.

Q. Leave the mineral particles in solution, which take the place of the lime, which is carried away?

A. Yes, sir.

Q. Now in all cases of metasomatic change and deposition of ore veins is it not true, Mr. Palmer that the limit of the metasomatic process is the limit of the lode?

A. Not necessarily, no.

Q. Not necessarily, but is it usually. Isn't that the case usually?

A. No, not necessarily so.

Q. I asked you usually, if that be not the case?

A. No, not usually.

Q. It would not be strange?

A. That is one process of lode making.

Q. I know it. I have heard it; I do not know it; my knowledge is limited upon these things; I have heard it. Now it would be quite fair to say, would it not—for a miner to say, at least—that the

limit of the ore vein which he discovers in the lime is the limit of the lode?

A. No.

Q. Ought a miner to know better?

A. Yes; they do.

Q. He ought?

A. And you will find that the miners will crosscut that lime in every direction, conceiving the lode to consist of lime between the quartzite foot and the quartzite hanging. They crosscut and prospect it in every direction, with the reasonable expectation of finding ore within those limits.

Q. With a reasonable expectation of finding ore?

A. With a reasonable expectation of finding ore.

Q. Or finding another place where this same metasomatic process has occurred, isn't that true?

A. Yes. Well, other ore bodies have been deposited in other manners; but where ore veins are deposited in the way you have named, if they work out a body in the lime they will naturally drive through the lime to see if they can get some other place where there has been a deposit of a like kind; they will crosscut that lime and prospect with a reasonable expectation of finding ore anywhere through it. That has been the case with every lode of the kind that was ever worked, and it is most emphatically the case with the Eureka-Richmond in Nevada, it is most emphatically the case with the Last Chance and Bunker Hill & Sullivan in the Coeur de Alenes in Idaho.

Q. They will sometimes drive through any country rock with a reasonable expectation of finding ore, will they not?

440 A. Not always, no.

Q. Well, then do they drive tunnels through country rock without a reasonable expectation of getting ore beyond?

A. In this instance we are not driving in rock; we are driving within the limits of the lode. It is not country rock.

Q. But you are speaking about reasonable expectations?

A. Yes, sir.

Q. And a reasonable expectation has nothing to do with the quality of the rock which——

A. Yes, but we do not prospect the entire earth with that view; only in veins, where we have veins and lodes, whether it be a fissure or bedded. If it is very wide as a fissure, it is constantly crosscut and prospected in every direction, with the reasonable expectation of finding ore crossing these ores within the limits of the lode, and reasonably expect to find it. It is true of the Ontario lode, which is a fissure, just as true as it is of the strata of the lodes of the Jordan and the Old Telegraph.

Q. Here you have spoken about a belt of limestone in the Eureka district?

A. Yes, sir.

Q. Which you say is two miles wide. They drive through that lime in the expectation of finding ore, do they not?

A. Within the limits of mineralization, yes—not outside of it.

Q. And also here?
A. And within limits.
Q. And so in this part of the lime, this Jordan lime, they drive through the lime in the expectation that they will find ore bodies?
A. They do, and they find them.
Q. And they find them?
A. Yes, sir.
Q. And so in the Eureka lime, two miles wide, they drive through the lime and they find them, do they not?
A. They do, within those limits of mineralization. In that mine that you speak of those limits of mineralization are five hundred feet wide, while here we have it one hundred and fifty.
Q. Now, Mr. Palmer, you have already said that all of these fissures were made subsequently?
A. Yes, sir.
Q. You are pretty sure of that, are you?
A. I am.
Q. Have you examined them the same way that you examined the Ashland for the purpose of determining that fact?
A. Yes, and examined them in the same way along the foot; where you have the contact between the quartzite and the lime there in the change from one to the other it is so easy to mark the difference or the amount of throw, but out in the middle of that through out the lime belt it is very difficult to tell the amount of the throw.
Q. Now, Mr. Palmer, your attention was called to the Coolidge stope?
A. It is right along in here.
441 Q. The Coolidge stope and the Coolidge cut?
A. Here it is.
Q. Where is the Clark?
A. Here it is.
Q. How many feet—about how many feet to the east between the two is it?
A. Between the two?
Q. Yes.
A. About seven hundred feet—between seven and eight hundred feet.
Q. Now at the Coolidge stope——
A. Hold on, I am wrong.
Q. That is too far, I imagine?
A. It is about between four and five hundred feet. I got the wrong scale.
Q. Between four and five hundred?
A. Yes.
Q. Now, Mr. Palmer, at the Coolidge stope what do you find in the way of ore?
A. I find ore nearly through the entire length of this crosscut that is marked "Coolidge crosscut. At this point the ore raises.
Q. Raises?
A. And as you get over the top of the roll it goes down again.
Q. How high up does it raise?

A. In other words, it is about like that, with raise up here, going over the fold and down on this level, carrying ore all the way.

Q. How high up does it rise?

A. From the level on the side?

Q. From the level of the tunnel?

A. From this same level. They are the same level.

Q. Yes.

A. From that it is about ten feet or such a matter. It is near the top of the roll.

Q. How high?

A. It is near the top of the roll.

Q. How high can you trace the quartzite up? How high is the quartzite?

A. Well, above the level there is about fifteen or twenty feet thickness of ore, and quartzite right above it.

Q. How high above does it go?

A. Joining the ore, coming in contact with the ore; you meet the ore against the quartzite.

Q. Well, the ore and quartzite both at the same distance above. Now how far below can you trace it below this tunnel level?

A. How far below it? What is the dip of the ore vein there—the dip of the vein?

Q. The dip of the ore body?

A. Of the ore body?

442 Q. Yes.

A. On this side it raises probably about thirty or thirty-five degrees and rolls over and down.

Q. I am talking about the top on this side of the roll?

A. There is quartzite, you understand, below the ore all the time.

Q. Does it dip to the south?

A. It dips northerly in that direction, and from the summit it dips southerly in that direction.

Q. Until you get over the roll the dip is here to the south?

A. When you get over the roll.

Q. And then the dip is where on this side?

A. The dip is then southerly into the trough, which again rises.

Q. I did not ask you anything about the trough from which it again rises, but the dip here is to the south?

A. On this side of the roll to the south, temporarily to the south.

Q. How far down does it dip to the south—how far beneath?

A. It dips down to the trough, from which it bends and goes up again to its normal condition as shown on that little sketch I showed you.

Q. Where is the bottom of the trough?

A. The bottom of the trough?

Q. With reference to the United States tunnel?

A. The bottom of the trough is about on this red level here, which is No. 2 level.

Q. How far would that be?

A. This drift is about in the trough.

Q. How far would that be below the No. 1?
A. No. 1?
Q. Yes.
A. Well, that is eighty feet—seventy or eighty feet perhaps. You see here, Judge, you start from the bottom of the roll or trough rather in this incline and follow the incline up underneath this branch and come up at the Coolidge, tracing the ore all the way up, a little above, but then make a turn and go over the summit and go down on the other side.
Q. When you got to the Clark stope what did you find as to the roll?
A. The same condition.
Q. The dip of the south side is to the south?
A. Is to the south into the trough, from which it again rises to the surface in its normal condition.
Q. Have you been in the Emma west drift?
A. I have.
Q. What did you find in there?
A. I found lime, or vein or lode throughout it, throughout its length.
Q. You did not strike in it any quartzite?
443 A. No. The quartzite lies back of it this way of the lode, back in this direction. Well, it rises above in this direction and finally turning over, and again takes its normal condition going to the north.
Q. Do you know the fissure called the Rip Van Winkle fissure?
A. Yes, sir.
Q. Whereabouts is it?
A. Here it is. Here is the opening of it at the surface.
Q. What is that in?
A. That is in lime; and they have followed that all the way down to this——
Q. You did not find any quartzite?
A. That is in lime.
Q. In the Rip Van Winkle here, in this working here—here is a tunnel here, is this in lime?
A. What tunnel?
Q. The Rip Van Winkle?
A. It is on the fissure.
Q. It says "Rip Van Winkle tunnel." What is that in? What does that commence in?
A. That is run in the quartzite, striking the lime and the ore and the lode just beyond station 7.
Q. Whereabouts does the tunnel cut the fissure?
A. It cuts it a little beyond this turn that you see on the turn.
Q. In quartzite?
A. In quartzite, up near to that point where it strikes the lode.
Q. Where it strikes the fissure? What does it cut the fissure in?
A. It strikes the lode; it strikes the fissure.
Q. Don't it strike into the quartzite—this quartzite at the beginning of it?

A. When you make that turn you come into the fissure and ore, with a dip to the strike of the coursing of the lime bed.

Q. The Rip Van Winkle fissure comes back here into the quartzite, does it not, and this tunnel intersects it?

A. It may have come back a little way beyond the lime.

Q. It is a fact, Mr. Palmer, that it does come back into the quartzite?

A. Well, I don't know, I looked for it here in the Neptune tunnel several times to find out where it goes, and I have never found it. I have looked with the expectation of finding it, but it seems to be limited; but I could not find any quartzite, at least I could not find it in the tunnel.

Q. Returning to the Coolidge and Clark stopes, does the company —does the ore vein from the Coolidge stope to the Clark stope dip to the south for that distance of four or five hundred feet on that roll, as you call it?

444 A. Portions of it, as I say, will dip to the south until it reaches the bottom of the trough in the fold, and then rises again.

Q. Your answer is broader than my questions, but I will be satisfied with it. So that the facts are, from the Coolidge on the south side of the roll, as you call it, to the Clark stope, a distance of four or five hundred feet, the ore vein dips to the south?

A. Dips to the south from the summit, and to the north in the other direction on the other side of the summit.

Q. Now this Emma tunnel you say—what is called the Emma west drift which extends from Station 34—you say this is in the lime bed?

A. In the lode lime.

Q. In the lode lime?

A. Yes, sir.

Q. How does the lime dip at that point?

A. How does it dip?

Q. Yes.

A. It dips at that point to the north.

Q. To the north?

A. Yes, sir, that is right; to the north.

Q. Now at this point the dip is to the north?

A. Yes.

Q. You were interrogated, Mr. Palmer, about your having seen ore in these workings to the north—No. 1 Emma west drift in the Northern Light and Fairview ground. I will ask you whether the ore which you found there is in the neighborhood of the Ashland fissure, if the fissure extends up that high as far as your furthest workings there?

A. Well, I did not recognize the fissure through there at all.

Q. But you know the locality about where these workings are on the Northern Light and Fairview claims?

A. Yes.

Q. And you know how the fissure extends north with reference to these claims?

A. Yes, sir.

Q. Can you say these workings are not in the neighborhood of the Ashland fissure?

A. It is a fact these on the Northern Light are in the neighborhood of it, but the exact position of it I cannot say. It is apparently lost in the lime.

Q. Now returning again to this Rip Van Winkle tunnel?

A. That ain't it.

Q. This is it, Mr. Palmer?

A. Here you are.

Q. Now there is a crosscut from the No. 1 drift to the Rip Van Winkle fissure, is there not?

A. It is, yes.

Q. Tell us how the dip of the lime is at that point?

A. How is that?

Q. The dip—what is the dip?

A. Of the lime. The dip of the lime is to the north.

Q. At that point?

A. To the north at that point, yes, just the same as it is here in the Emma west drift; all the way through it is in lime, and the one right above is all to the north.

445 Q. You have there what you call syncline instead of a fault?

A. A what?

Q. The thing you have there is a syncline instead of a fault? You call it a syncline?

A. Well, there is a synclinal fold there in the trough and an anticlinal also.

Q. You have an anticlinal here?

A. Yes, sir; a synclinal fold there, and an anticlinal fold here.

Q. Was that to the north of the two?

A. To the north of them. In each instance the bodies came back to their normal condition.

Redirect examination.

By Mr. DICKSON:

Q. In your cross-examination when speaking of the roll in the east end of the Coolidge stope you at one time said that you followed ore and you had quartzite above the ore?

A. Underneath.

Q. You mean underneath?

A. I meant underneath the ore.

Q. Now to determine whether or not the Ashland fissure was found on the 100-foot level where the ore is at Stations 952 and 25, you would have to have the difference in elevation between where you find the Ashland fissure at the surface and that point there and the dip of the fissure to tell whether it was there or not, wouldn't you?

A. I would locate the Ashland fissure as all the others, practically that of north and south in the body of the lime, but it cannot be identified by anything within the limits of the lode. It is apparently lost.

Q. And whether it came any nearer to that would depend upon the difference in elevation between the Ashland fissure at the surface and the dip of the fissure, and you would have to make a survey, wouldn't you?

A. There is no denying that it crosses, but within the limits of the lode it has so lost its identity that it would require a little surveying to determine where it ought to be.

J. FEWSON SMITH, a witness produced by plaintiff on rebuttal, and having been already sworn herein, testified:

Direct examination.

By Mr. DICKSON:

Q. Calling your attention to Exhibit OO, I will ask you if that is a section with projections upon it?

A. Yes, sir.

Q. It is not a pure section?

A. No, sir.

Q. Upon what line is the section taken?

446 A. The northerly side line of the Jordan claim, lot 64.

Q. From its east end line to what point?

A. From its east end line to a point horizontally determined there beyond to these workings on these maps.

Q. What workings are indicated?

A. This Ashand tunnel.

Q. This would be the lower Ashland tunnel?

A. Yes, sir.

Q. These other two little square ones are the upper Ashland tunnel?

A. Yes, sir.

Q. Are the workings and stoping that are put on this map put on from actual survey?

A. Yes, sir.

Q. Does the section itself or projection upon the section indicate the extent of the projection which has been indulged in?

A. Yes.

Q. Is that marked upon the map?

A. No; I have not shown on the map what the distances are.

Q. I will ask you if anything has been projected upon that that is not within the limits of the lime belt?

A. There is nothing projected there but what is within those limits?

Q. And under whose direction did you prepare that section?

A. The direction of Mr. A. F. Holden.

Mr. HILES: I have no cross-examination.

ALBERT F. HOLDEN, being recalled by plaintiff for further examination in rebuttal, and having been duly sworn herein, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. I will have you explain this section without interrogation?
A. The purpose of this section or—(Exhibit OO, J. W. C.).
Q. The method of construction?
A. It was the intention to make really a glass model to represent the various features, but the workings were so large and being so difficult to make a glass model so as to meet all requirements for practical use, and we found it impossible to make one. So that we have had sections prepared, first a section right along the north side line of the Jordan, and then there is a section taken 100 feet southerly, also a section 100 feet northerly, and another section 100 feet northerly and a section of a portion 150 feet northerly, and these sections are brought together so that it is the same as if you stood looking through a glass model and observing what you would see looking down the plane of the vein, and these sections have been put on this Exhibit on but one section plane very much as if
447 you would take a camera and photograph it right down through the rock.
Q. The projections are at right angles to the plane?
A. The projection is in the line of the plane right back up——
Q. At right angles?
A. No; they are vertical angles. If this book were representing the plane, we have passed vertical planes through the section thus.
Q. And carries them back to the line of section?
A. These several planes are carried up on to one plane.
Q. You have examined that section with care?
A. I have.
Q. I will ask you if all the red upon that section is intended to represent ore?
A. It is.
Q. And the yellow color here representing the foot wall of quartzite?
A. The yellow color representing the foot wall of quartzite.
Q. The blue the lime?
A. The blue represents the lime lode.
Q. And the portion in white represent what?
A. That would have been colored in yellow if it had been filled in with porphyry at the further end.
Q. Can you say of your own knowledge the workings in the mine and ore occurrences, that the ore as shown upon that section correctly represents the ore as it is found in the ground and give your explanation of how the section presents it?
A. That represents the section in ore; there was more ore here, but it was not possible to outline it with certainty or accuracy.

Mr. HILES: I have no cross-examination.

ASA WILLIAMS, a witness produced by plaintiff in rebuttal, being first duly sworn, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. You are a miner?
A. Yes, sir.
Q. And in the employ of the United States Mining Company?
A. No, sir.
Q. Are you a miner in Bingham?
A. Yes, sir.
Q. Do you know a place in the workings of the Jordan mine called the Holden raise which is run to connect with what is called the Sampson ore body?
A. Yes, sir.
Q. Have you been there since that connection was completed?
A. Yes, sir.
448 Q. Calling your attention to say the upper 40 feet of that line of work that makes the connection, have you examined that?
A. Yes, sir.
Q. The upper 40 feet?
A. Yes, sir.
Q. What is it in?
A. It is in ore.

Mr. HILES: We have no cross-examination.

And thereupon the further trial of this suit was postponed until to-morrow, Saturday, the 25th day of October, 1902, at 9:30 A. M.

SATURDAY, *October 25th*, 1902.

SIDNEY W. TYLER, a witness produced by plaintiffs in rebuttal, being first duly sworn, testified as follows:

Direct examination.

By Mr. DICKSON:

Q. What is your full name?
A. Sidney W. Tyler.
Q. Where do you reside?
A. Denver, Colorado.
Q. What is your profession?
A. Mining engineering.
Q. Where did you study your profession?
A. In Germany at the mining school at Freiberg and the University of Gottengen.
Q. When did you graduate?
A. I came home in 1867 and since then have followed the profession of mining engineering in this country, in various States and Territories.

The COURT: Unless you wish to make it a matter of record, it is

not necessary to go into his qualifications, I have known Mr. Tyler for a long time.

Q. Are you acquainted with the mines in controversy in this action?

A. Yes, sir.

Q. How much time have you spent in the examination of them with a view to arriving at a conclusion as to the veins in that country or the character of this particular vein in controversy here?

A. Well, with the exception of a month in California and Denver and about three weeks in Salt Lake City I have put in nearly my whole time from April until the present, until the suit was commenced.

Q. April of the present year?

A. Yes; it would be about four months altogether.

Q. Did you arrive at a conclusion as to what constituted the vein in the territory in controversy?

A. I did.

Q. And its boundaries?

A. I did.

Q. We will probably save time Mr. Tyler without waiting for questions if you will take the matter up in whatever order is
449 most convenient to you; give the facts which came under your observation and led you to the conclusion to which you did arrive, and then if there is anything after that I will interrogate you about it?

A. I will take the surface map.

I find on the ground a belt or band of limestone or what was formerly limestone from 100 to 200 feet in width, which appears to me to constitute the lode. It contains nearly all the ore bodies that are found; there does not appear to be any in bounding quartzite, except unimportant fissure veins, or what is contained in the more unimportant and more recent fissures. On the surface map I have denoted the boundaries of this lime belt or the position of this lime belt by the blue color, the blue tint. The ground in dispute in this suit lies near the upper end of the map under the Kempton claims, and the ore bodies are in this belt of lime, included within it. The larger part of the belt of lime however, is not included in the Kempton claim but lies in the Jordan and Mountain Gem claims. The Kempton ore body, so-called, has been traced to the surface through intermittent openings for about 300—for about 500 feet from east to west. I will point out the principal places where this tracing is visible. This is 42. One opening, the most westerly, is denoted at S 42 upon the map; in the next from S 328 to S 336 there is vein matter. Then again after passing around or over the dump the tracing shows vein matter at S 31 and S 336 and S 30 and S 322, S 33, and then more or less along the work made by the defendants out to S 340. At S 340 there is a vertical vein passing through, and the ore tracing apparently has been dislocated about six feet, I mean the mineral matter, oxidized matter showing in the opening. Then it is continued easterly by the plaintiff from S 340, which is a shaft near the northwest corner of the Mountain Gem mining claim. The

same material is found here in the joints of the limestone that is found back in the tracing of the defendants, and it is also shown, more or less of it in the tunnel called S 343, which is next to the shaft. It is found in the inner portion of that tunnel, the same or what I take to be the same streak is also shown in S. 342 near the mouth and south of the south side line of the Kempton claim. There is a streak of material similar to that seen in the tracing from four inches to six inches in thickness and having the general dip of the bedded ore body, about 40 degrees to the north. Besides that an ore tracing, of oxidized material is also found to the south of it in the Mountain Gem ground in what is here marked upon the map Corner incline; that is some 60 feet deep on an incline of about 40
450 degrees, following the bedding of the lime and shows bedded ore in the bottom of about 12 inches, of first class sulphide ore.

Q. How is that marked?

A. Corner incline S. 29. Then again here in the Mountain Gem claim we have a cut marked Rip Van Winkle tunnel. While it is also heavily stained I do not see any ore. At all events it is in the southeast corner of the Mountain Gem claim and over the Rip Van Winkle tunnel at the surface. Here ore appears at the surface and the appearance is of a good deal of it having been quarried out there from the very first. That is connected with an incline to that stope below marked 420, 421—that is, I have been a part of the way up, in the incline, and part way down it from above but I could not get all the way through, but I suppose however, it is connected. This ore body is 15 to 20 feet thick, which is also the bedded ore body, and apparently considerable ore has been stoped and shipped from the mine—whether shipped or not I don't know but I do know there has been a good deal of stoping done. That also continues in depth as shown on the map here by the incline down to station 422 and below, and there is a good vein continuing on down to the bottom, the bedded vein. Here also is shown on the Mountain Gem to the south of the tracing in S 22, what is known as the Mountain Gem incline. That however is comparatively unimportant but there is a bedded vein there.

(By Mr. HILES:)

Q. What do you call that last incline?

A. Mountain Gem incline S 22 it is marked. The various other openings and inclines here shown within the boundaries of the Mountain Gem show limestone but no ore body of any importance. To the east of the Mountain Gem we however find other ore bodies in the lime independent of the defendant's tracings, one known as S 3 and the other as S 4. These both show strong fissures in the limestone with the oxidized ore which is characteristic of the other ore openings of that kind. The Jackson incline is another opening which would show a light ribbon of ore; represented on this tracing on the northern part of the lime belt. The joints of the limestone which appear at a place eight or ten feet high in the side of the cut are filled with this same red oxidized ore material.

Q. What about the Jackson incline?

A. Oh, the Jackson incline itself is run upon a fissure in the limestone, and there has been ore stoped above and under it by stopes running out from this incline. The incline follows down the bedding of the limestone and the ore in the fissure seems to lie
451 in ore bodies having their dip with the limestone, ore shoots having the dip of the limestone and not vertical as in the ordinary fissure structure. I believe that it is connected down to the lower end with the workings of the Old Jordan. There is one other opening S 7 with ore to the width of the incline, which also shows at the surface here. The rest of these openings S 21, S 15, S 9, S 10, S 11, S 8, S 14, S 13 and S. 18 are tracings of the plaintiffs on the lime belt. The tracings continue to the south of those just mentioned through S 310, S 308, S 307; these are on the southerly edge of the lime belt and show ore, this is surface ore. And then coming to Cut A, Cut B and so on, Cuts C and D, these represent other large excavations where ore has been taken from the surface, or where the surface has caved in to the stopes below, more particularly Cuts C and A.

Q. That is probably sufficient on this surface map. Take up the next subject because our time is limited.

A. Now, these ore bodies being found in all parts of the lode and not confined to any particular stratum of it, leads me to call the whole band—it is below in places, for instance in the most southerly portion opposite the mill, the incline in the neighborhood of the so-called Ashland tunnel—the whole width of the lime belt is replaced by either ores or by vein quartz. In some places the ore itself occurs practically from wall to wall, and where it is not all ore in that part of the vein as I say it is vein quartz; so for that part of it you could not—I cannot think otherwise than that it should be denominated one lode. It is bounded by the two quartzite beds which are invariably found and there is an invariable well marked separation. I would say there is some porphyry through the country on the hanging wall, perhaps 15 or 20 per cent. of the hanging wall might be porphyry in the place of quartzite.

Q. Was this blue tint upon the surface put there under your supervision and direction?

A. Yes, sir.

Q. And from observations made by you?

A. From observations made upon the ground.

Q. And are its easterly and westerly limits correctly laid upon that map?

A. Well, they are for the greater portion of it; There is a portion of the map near cut D where the lime boundary is dotted in in place of being made as a solid line, I would say there has been great erosion and the ground is covered with debris and soil there so that it is impossible to determine the boundaries.

Q. At the easterly end with the exception of the fissures just indicated where it is covered with debris, it is correctly represented is it?

A. Yes, sir.

Q. Go on?

452 A. Now then the greater part of the ore deposits in the lode, in this limestone lode are as you might say longitudinal,

lengthwise of the lode and not found in the fissures which run into it or cross it as such. I think the fissures coming out of the quartzite are later in formation, at any rate, than the main lode. To illustrate what I say we have the Coolidge stope, running along one of the lime folds for nearly five hundred feet, longitudinally of the lode, and connecting on the east with the large stopes shown on the map where ore has been taken out. The Coolidge ore body is simply prepared for stoping; it lies there with the mineral in it and is from ten to thirty feet thick measured vertically and keeps this position along the roll and apparently is not connected with any fissures at all, any of the fissures in the mine.

Q. In that connection I will ask you if you are familiar with the plaintiff's map Exhibit KK upon which the Coolidge stope is shown; you have seen it? I mean the map in which the Coolidge stope is shown as though it has been stoped out?

A. Oh, yes.

Q. Can you say whether the ore body easterly and westerly and northerly and southerly known as the Coolidge stope is as extensive as is shown upon Exhibit KK?

A. Well, as I understand they were put on from the mine maps, the block maps and are correct.

Q. You have been through these levels?

A. I will say I have been through the levels intersecting it around the boundaries of it, I know to that extent those levels.

Q. You know it is as long easterly and westerly and as wide northerly and southerly as shown on the map?

A. Yes.

Q. Go on?

A. That ore body, as I say, is connected with the large ore bodies & slopes southeast, but there are other ore bodies not connected as yet. For instance, one ore body known as the northern Light ore body, which appears to be isolated, but it is also in the same lime in which are found the other ore bodies. This lime is traced or followed through the No. 1 West drift right out there to the ore body showing that it is a part of the same lime or part of the same ore body, but to a certain extent they are more or less isolated ore bodies. For instance the ore which has been mined and found by the Kempton people under the Northern Light and Kempton ground where I now point, from the purple level up to the Green level. Then there is also the Sampson ore body, which is found extending down to the workings of the Jordan and extending east of it along the connection with the upper tunnel. That is represented as being partly stoped and partly to be stoped.

Q. Have you been from the connection in the ore body up to the bottom of the Holden raise?

A. I have.

453 Q. And through what do you travel?

A. You travel through—there is ore in the yellow level to the bottom of the Holden raise and from the Holden raise up to within thirty feet of the bottom of the Sampson stope. That is also

in the bedded ore vein of from four to five feet thick, or five to six feet thick.

Q. Was that thirty feet open at the time you were there?

A. No, sir; not opened through.

Q. What strength of ore did you have at the top of the Holden raise as it then was?

A. At least five feet of shipping, smelting ore.

Q. How was it at the top?

A. There was a large stope there but at that time I could not get into the bottom of it, that is to see what it was because it had been stoped out & had caved.

Q. Go ahead?

A. This ore can be connected down through by means of the Holden raise to No. 1 level, as we judge that the ore would extend from one level to the other, having it at the top and at the bottom and we perceive it without a break for instance down to the Emma drift in ore and from that out to the raise 824 is also connected with ore up to the Coolidge stope or Coolidge ore body, and following back in the Coolidge and connected with a series of continuous stopes clear back to the east end of the Old Jordan.

Q. To where?

A. Clear back to the [illegible] end of the Jordan.

Q. Go ahead.

(By the COURT:)

Q. How much barren ground is there between the tunnel and the Ashland in that space between the Ashland ore body and the Sampson ore body—between these two ore bodies?

A. I do not think there is any absolutely barren ground through there.

(By the COURT:)

Q. You think that is all mineralized?

A. I think it is all mineralized. The limestone is excessively altered and metamorphosed, large regions of it especially in the neighborhood of the ore deposits are turned into marble, some of very coarse and crystalline character and some of it ground fine, and it is mechanically metamorphosed too, that is shattered to an extreme extent, and it has been also recemented, and the effect has been to almost entirely destroy the original bedding planes, so that there is rarely to be seen indications of them. That is one other reason for considering it an entity to itself as forming a lode in my opinion. Speaking of the fissures in the lode many of them are confined to the limestone and do not penetrate the quartzite at all. Those that are mineralized in the limestone cannot be traced out. In
454 fact I do not—I know of but one lode and that would be the Ashland which can be traced through and across the lime belt and into the overhanging quartzite. That has been followed by the——

Q. I will refer to that afterwards with a tracing.

A. I was going to say that has been followed up by a tracing.

But, the others, those coming from the quartzite, penetrate the lime for a little ways and the most of them are lost in the lime belt. It is very hard to make up one's mind whether he finds them or not. (3000)

Even the great Galena fissure which has been followed for 5000 feet in the foot wall of quartzite is traceable only to a small extent through the lime. I am not at all sure that they have been able to fined it a hundred feet into the lime bed, which is there about 200 feet wide. I understand that a vein corresponding to it has been found in the hanging quartzite, but I was not able to find it and could not be shown where it was.

Q. You did not discover it?

A. No; I did not discover it. And then there is another——

Q. Speaking of these fissures that are found in the limestone that run in all directions, give some idea as to how numerous they are if you can give any idea?

A. Oh, well, there might be a hundred of them going in the length of one of the levels from one end to the other. Then there is a feature of the lode which has been spoken of as the roll or quartzite fold in the foot wall. In the faulting—forming of the mountains and in folding of the lime bed and in the mountain building process at the time probably that the Wasatch Range was formed and the Oquirrh Range, portions were faulted in a waving manner. Now these waves on the tops of the folds in the limestone are very much more shattered than in the intermediate straight portions you might say. The top of the roll for instance, would be vastly more shattered than the sides. Then again the bottom of the basin formed in making this roll is also badly shattered. Now I judge that that was one cause for the position of the ore bodies; lying along the tops of the roll, along the top of the roll, because of the rock being so much more shattered it was more favorable to ore deposition and the eating out of the lime and replacement by ore. Then there are many variations in this roll longitudinally. It is not one straight plain roll that runs through the whole mine but it varies and there are breaks and faults in it and those seem also to have been choice places for the deposition of ore bodies. That is particularly noticeable in the neighborhood, the Jordan incline.

455 Q. On Exhibit S?

A. On Exhibit S, yes, sir, where is located the Piper stope and the Lion's Den and numerous others; and I would say in addition to those stopes shown on the map the whole region about there might have been square setted, with the red square setting; that it is still there and about to be stoped for it is a vast mass of sulphide ore between the stopes and around them.

Q. Merchantable ore?

A. Merchantable ore. At the present day merchantable ore.

Q. You spoke of one place where the roll was very noticeable. Is there any other place that you wish to call attention to?

A. The breaking of the roll, the longitudinal faulting of it that is are in the neighborhood as I say, one of the Jordan incline and the other in the neighborhood of where the Galena fissure enters into the

limestone—It is my idea that these fissures coming out of the quartzite are as a rule, later than the main lime deposit because we find that generally there is an actual displacement of the foot wall where they enter the lime—there are some of the veins that may show displacement of only eight or ten feet—in the Galena as much as 90 feet probably, and the Condor fissure so called, which enters the eastern portion, that has twenty or thirty feet of displacement.

Q. In the easterly portion of what is shown on Exhibit S?

A. Yes.

Q. What about the Ashland fissure; do you find any displacement of the ore bodies connected here?

A. I think the Ashland would show a displacement of eight or ten feet, as I will say.

Q. At what point?

A. In the neighborhood of station 971.

Q. I will ask you whether you find ore in that neighborhood?

A. There is ore in a bedded vein breaking out from the main fissure and there appears to be a displacement as I say of eight or nine feet in the bedded vein, one side being back of the other, that is the west side lying further south than the east; a continuation of the same.

Q. Does that show a displacement of the ore itself?

A. That shows a displacement of the ore vein.

Q. When you speak of 90 feet on the line of the Galena fissure, do you mean horizontal or vertical? or is it both?

A. Well it amounts to—it would be both probably, but 90 feet is the measurement of the horizontal displacement that I saw measured on the Highland vein; and here, that is another little lime
456 belt, about 10 or 15 feet thick, and that shows as I say about 90 feet of displacement horizontal. As to the vertical displacement we cannot tell.

Q. Go ahead.

A. The question of the probable or possible enrichment of the main ore body by the fissures, the quartzite fissures, is more or less disposed of in the case of the Galena vein. Now where the Galena vein has been followed up from the second level to the upper level, no, from the third level to the second—that would be from the green level up to this red level—it is comparatively barren, the Galena fissure itself in the lime, while both to the east and west of it are large stopes of valuable ore.

Q. Lying how with reference to the lime?

A. Lying as I say east and west of it but not connected with it.

Q. How with reference to the bedding of the country does it lie?

A. The ore shoots lie with the bedding of the country more or less but at that point there are very large ore shoots, some vertical, some with the bedding planes and in various positions.

Q. Now as to the Ashland vein and the bedded vein under the Grizzly and Northern Light claims.

A. It is not my opinion that that large deposit of ore keeps widening out on the Ashland fissure or vein; but that the Ashland fissure or vein is incidental undoubtedly and must go through it somewhere,

but it is practically lost in it, lost in the ore body and in the bedded vein. That goes through is probably from the fact that the tracing shows a small fissure in the quartzite overlying the quartzite. (lime)

Q. Still to the north?

A. Still to the north and followed through, it would be if that is a part of the Ashland vein, it would give a curious result. (Makes sketch.)

Q. Explain to the court what you mean?

A. This would be a horizontal plan of the situation there, the Ashland vein running in until it strikes the bedded vein and dipping to the west at an angle of about 80 degrees, some 75 to 85, rather irregular, and then beyond a small point out in the limestone. It cannot be found, as I say, at least I have not been able to find any vein going out north but I should judge that it does so from the fact that there is a surface tracing of it; and then there is a large ore body 180 feet long running east and west dipping at 40 degrees or thereabouts to the north. Now it seems to me the case of the less including the greater if you would get that into the Ashland fissure.

Q. There is 180 feet that is intended to be illustrated on the sketch you have drawn. Is it this purpose drift?

457 A. In the purple drift.

Q. Between its west end and station 961?

A. Yes, sir.

Q. The dip of that is with the bedding of the country?

A. With the bedding of the country, yes, sir. I would say with regard to the Neptune Kempton lower tunnel that from station 418 northerly the limestone shows many other fissures dipping at various angles and having various strikes. So that while there is 17 of them, I think I counted, in the distance to the Sampson fissure, the Sampson being No. 17, some of those were of a size that would justify development at the present time, some showing two or three feet of good ore, and some smaller ones, but it has been the habit apparently in the mine to develop those smaller seams frequently with the view or with the expectation of their leading to larger ore bodies. I saw several instances in going through the mines where that course had been followed, a little fissure has been found to lead to a larger ore body, to a good ore body. Now having these different courses and dips development on such a system of fissures as that would tend to tie the whole belt of lime together, making a net work of fissures extending from wall to wall through it if they were followed up. Oh, I have neglected to mention one thing in regard to the tracing, the Kempton tracing.

Q. Of the surface, you mean?

A. Of the surface tracing, yes, of the ore body. I do not consider that partakes of the value of any independent vein or anything more than an irregular cropping of one of the ore bodies in the vein itself. As I say, the ore deposit in the easterly portion of this lode can practically be followed from the foot wall to the hanging quartzite. In going through the right branch of the Mill tunnel for instance and then taking the cross cut north from 395 to 555 we are going through ore in vein quartz all the distance—the larger portion of it is through

ore. At 555 you will find the hanging wall of quartzite and this stope or Foot wall drift at station 514, 515 is along the foot wall. Across there and for a distance around the ground is open and accessible; and there are other places where you could have passed through the old stopes that are not accessible now but the edges of the stopes are visible. We have followed them in that way but I could not go through them on ore myself.

Q. Right in that connection calling your attention to a portion of this vein still further east where the Niagara and Old Telegraph are situated, the works there were accessible to you, were they?

A. Yes, sir.

Q. Do you find any fissures there?

458 A. In the Niagara there is an open cut at the surface, it is open to the surface, and there you can see the foot wall and the hanging wall with both quartzites exposed.

Q. And what between them?

A. Ore has been stoped; there is a great hole there.

Q. Continuously?

A. Continuously, from one side to the other and I followed an ore body in the Telegraph for something like 2500 feet in length.

Q. Uninterruptedly?

A. On one level, uninterruptedly; there were no fissures there at least I found none.

Q. Cross fissures?

A. No cross fissures coming into it.

Q. What do you mean by cross fissures?

A. These fissures coming out of the quartzite.

Q. But are not confined to the lime belt alone?

A. No. Also I will say at the northern—on the northwestern end in what is probably a continuation of this same lime belt, after being faulted to the north by the porphyry intrusion, I will say the full width of the lime belt. There is an open cut on the ground now where ore was quarried from wall to wall, that would be in what would be a continuation of this lime belt westwardly after having been faulted north five or six hundred feet by the porphyry. That is in Stewart No. 1.

Q. Is that limestone belt which you find west of the porphyry, when you get to the limit of the throw, the same lime belt you had here on which the stopes are?

A. I think it is undoubtedly; there are two similar lime belts to the Jordan lime and Commercial lime, and also to one corresponding a third lime belt lying south of the Jordan lime on this side of the fault to the south of the gulch.

Q. You find three lime belts in the same relative position on the other side of the faulting?

A. On the other side of the faulting. Another place where the ore has been practically followed from foot to hanging is east of the Jordan where the old Utah cut is. A vast amount of material has been taken out by open cut work and it extends to the porphyhy and the quartzite upon the north and to the edge of the cropping or gossan on the south.

Q. You mean by gossan the croppings of the lode?

A. The croppings of the lode. Now this lode as I will remark again, it seems to me must be considered as a single thing, an entity itself. I cannot conceive of any way of dividing it up into separate veins. Any plane that you run in any direction, any developed plane or dividing plane if followed for a short distance would
459 run into a large ore body; you would have to have a very crooked division plane to try to separate the ore into different planes.

Q. And in places where the ore reached the hanging wall and foot wall, you could not divide them at all?

A. No.

Q. Except by an imaginary plane?

A. And speaking generally too all the ore bodies dip with the lime bedding. There are as I say, a few vertical slips or nearly so, but they are as a rule connections between the dipping ore bodies, the ore bodies having the general inclination of the lime bed. As to the apparent vertical fissures in some of the ore bodies as long as we suppose that the vertical fissures coming out of the quartzite are later we could or should expect to find vertical seams running through the ore bodies in sympathy with the general cracking of the country by the cross fissures. There might not ever be found any single narrow belt following the line of the fissures as they got into the lime and into the ore but we would expect to find a zone of sympathetic fissuring and cracking. I believe that I mentioned that I could not find any fissures corresponding to the Ashland in that level there.

Q. In that connection Mr. Tyler I am requested to ask you about a thing I have overlooked, whether the ore found in what is found on Exhibit S Kempton workings, second level and colored in brown, I would call it, taking the westerly 100 or 120 feet of the lode, how does the ore lie with reference to the bed?

A. It lies parallel to the lime bed, parallel to the folds of the lode dipping with it. It is followed from one level to the other with the incline so that one can go continuously down there.

Q. What does the incline disclose with reference to that?

A. The ore dipping with the bedding.

Q. Taking then the second level from its westerly to its easterly extremity, state whether or not it would be in ore?

A. The red level?

Q. Is that what you call it?

A. Yes; the red level is the second level.

Q. It has been called the Turnsheet level upon the other map. It is in ore for the greater part of it, greater part of the distance.

Q. Show me any place where it is not in ore?

A. Well, east of the Sampson stopes it is not all in ore but is in limestone with the exception of an ore fissure, on which a little branch drift has been run. There is also ore at the foot of the Kempton incline at B.

Q. Now passing westerly from the Sampson fissures on that red level, how continuously are you in ore, ore and vein quartz?

460 A. There are bunches of limestone at station 546 and there is ore in the drift running north from 546, or rather at the end of it—there is quite a stope. At T 3, the level is in ore.

Q. Now at 546, how much of a bunch of limestone is there there?

A. Well, there might be 20 feet width of limestone there.

Q. And then there is a working running southeasterly further on the same level in which at the end is found elevation 1160.7; what is that?

A. That is in limestone, that part of it.

Q. I mean the end of it?

A. The end of it is a very large ore body. From station A, through T-1, T-2 and so on, is through a mixed vein, and also a vein of lime and ore both found there; limestone and ore.

Q. Now coming to the level above which is called the Intermediate level on our map, Copper level drift upon theirs, starting at the westerly end of it, how far easterly do you go in ore?

A. Well, practically that is all in ore, the western portion is in a large ore body, but from B——

Q. But from B?

A. On to C and to the east end of it is through limestone and ore mixed.

Q. To G; where is that? Limestone and ore there?

A. Yes, sir.

Q. Just a little east of that 30 or 40 feet a level in the same color is found going on easterly; what is that portion in?

A. That is in ore.

Q. I call your attention to the workings on the No. 1 level running in a southerly direction from near station 892 and then following one branch running easterly, a crooked branch running westerly; I will ask you whether you have any ore bodies there?

A. That is on the foot wall, that is on the quartzite foot wall of the main lode. There is ore in the neighborhood of elevation 1022.9; there is ore there in that westerly branch, but that is very much shattered and broken, that country through there; there has been a faulting and movement close to the foot wall.

Q. What have you at station 1023?

A. Between these two points there is ore.

Q. Now I want you to trace, if you will, upon this map the Ashland fissure at the surface; you have seen the tracing upon the defendants' map have you, as exhibited?

A. I believe so; they are practically the same as ours.

Q. There is one point in it?

A. Here it is.

Q. On the Ashland fissure?

461 A. Oh, the Ashland fissure.

Q. Yes.

A. The cropping of the Ashland fissure would be disclosed by these surface cuts, S. 40 and S. 36; and then near station 37 and so on, I call that the cropping. This is stripped down. From station S. 37 two branches of the cropping have been developed apparently.

One is within the Northern Light claim about there, 20 feet from this point S. 49, 20 feet northerly from S. 49, and thence on about as indicated; thence on about as indicated by the lines of the map, which would go to the Old Jordan again proceeding northerly, this point you spoke of being 20 feet northerly—20 feet westerly of that I should say and went northerly.

By Mr. HILES:

Q. I wish you would indicate a point of commencement of your tracing upon the map?

A. You mean the tracing of the Ashland?

By Mr. HILES:

Q. Yes; the commencement point.

(Witness makes a line with red lead pencil on map.)

Q. That is about as you would place it?

A. Yes, sir.

Q. I call your attention to Exhibit S again Mr. Tyler before leaving it. I will ask you to state if you know where the discovery of the Grizzly is?

A. I know the position on the ground of what has been called the discovery of the Grizzly.

Q. Which Mr. Smith testified to?

A. Yes, sir.

Q. Where is it?

A. It is where I hold my pointer.

Q. Put a mark there to indicate it?

A. (Witness puts "Disc" on map.)

Q. That discovery is at the cropping of the lode?

A. There is a cropping of ore at that point.

Q. And what is its course with reference to the side lines of the Grizzly?

A. Well, it would cross the two side lines of the Grizzly.

Q. It is pretty near as shown by the workings.

A. Yes; that line of working is along the foot wall of the formation there to point marked 3; there is a shaft on the little streak of ore that came to the surface in lime.

Q. Calling your attention to Exhibit S, do you find on the No. 1 level of the plaintiff's workings here about stations 916 and 918 and through there in the ore body?

A. On a large body of ore there.

Q. Lying partly under the Fairview?

A. Partly under the Fairview and partly under the Northern Light.

462 Q. In your opinion is that in the same limestone bed that you have been talking about as having the workings of the Jordan in?

A. It is, but I think you have got the wrong position for the ore body; I think it is this lower one; here is the incline.

Q. That is the one I meant?

A. That is the ore body.

Q. It would be here in which stations 876 and 793 and so on are marked?

A. Yes; it would be the same lime lode.

Q. The same limestone belt spoken of?

A. In fact you go continuously in lime from the Coolidge No. 1 drift to the branch in which is found the ore body, this branch level in which is found the ore body.

Q. The same lime in which direction followed up?

A. The same lime that is followed up in the Holden raise.

Q. You have ore out there which you spoke about and have ore in here between them?

A. Yes, sir.

Cross-examination.

By Mr. HILES:

Q. It is true in one sense is it not that any mining district whatever is a zone of metal bearing rocks?

A. Considered as a whole?

Q. Yes.

A. That is frequently the case; yes. Sometimes it is an area irregular in shape and sometimes in the shape f a zone, considered as a whole mining district.

Q. And in every mining district throughout its extent small patches or veins of ore can be found anywhere?

A. That is, sometimes the case. I know of districts which are so thoroughly mineralized that can hardly be true. That is true in a large sense of the Butte Mining District. Numberless copper veins run everywhere through the granite.

Q. Have you been upon the Comstock?

A. No; I have never been upon the Comstock.

Q. Or at Leadville?

A. Well, at Leadville the ore does not occur in seams but in large bodies in the limestone at or about the contact with the porphyry beds or the porphyry intrusions and consequently that would not fit your case at all; your hypothesis.

Q. What is it?

A. It is not a district of little veins or fissure veins but a district of great ore channels.

Q. You say my hypothesis; what is my hypothesis?

463 A. Well, you supposed certain conditions of affairs with reference to the fissured country; that is what you started out with, didn't you?

Q. I asked you if any mining district was not in one sense a zone of mineral bearing rocks, and you said in one sense it was?

A. Yes; if you consider it on large enough scale.

Q. Now suppose that you find anywhere in any mining district an outcrop of ore at the surface of the earth three hundred feet in length and from five to twenty-five feet in width at the surface?

A. Yes.

Q. Ore which is merchantable ore; what would you say as to that

being an indication of a vein of ore or as to being related to the apex of an ore vein?

A. I should undoubtedly say that it was the apex of an ore vein if I did not know anything but of that one occurrence, if that was all there was to be seen or visible to judge by.

Q. You would call that a lode would you not?

A. I presume I should call it a lode.

Q. What is a lode, what is your definition of a lode?

A. A mass of mineralized rock with boundaries which can be found and bounded depended upon with clear boundaries.

Q. Is it not a mass of metal bearing ores in the mass of the mountain?

A. It might be in the mass of the mountain; it would have to be.

Q. And inclosed in rock which is not metal bearing?

A. That is another definition.

Q. Is not that a good definition of a lode?

A. Yes.

Q. Of metal bearing ores?

A. That would be applicable to lode to which you have clearly defined boundaries of the limits of the mineralization; another class of lode as I say is one which has definite boundaries without necessarily confining the boundaries to the limits of the mineralization.

Q. There are some lodes where the line between the country rock and the ore is not sharply defined?

A. Yes, sir. Under those circumstances one man might consider the limits of merchantable ore the limits of his lode, the extent to which he would stope the ground.

Q. A geologist would have a different view?

A. A geologist has very little to do with the mining laws of the United States.

Q. Well, in defining a lode a miner would have one view and the scientist would have another view; is not that true?

A. Well, not with regard to the lode. But if you begin to talk about veins, etc., then they would have certain meanings to the scientist but the word lode is a mere legal term.

Q. Is it not a mining term, what is the meaning of it?

464 A. Sometimes a miners term.

Q. What is the definition of the word lode?

A. Well, I gave it to you.

Q. Sir.

A. I gave it to you.

Q. I will ask you if the word lode is not an alteration of the verb to lead in miner's parlance?

A. The meaning was to lead and consequently it was the thing that lead it, that which led him was a lode.

Q. Is not that a good definition?

A. A good derivation, yes.

Q. It is a good miners definition?

A. Yes.

Q. And by the lode is meant according to that definition the ore or the thing which appears, which leads him to follow?

A. Yes, or something which he would follow with the expectation of finding pay ore.

Q. And then if he finds such a lead as I have described or a lode cropping out on the surface that is a lode, is it not?

A. That is a lode for him for the time being.

Q. And if some scientist comes along and tells him that it is not the lode he will still follow it if it pays, won't he?

A. I don't think he would stop because the scientist told him it had some other name.

Q. Or because the scientist should show him that the whole district was one lode he would still pursue his lead would he not?

A. Still pursue his stringer of ore.

Q. Now it is true, is it not, Mr. Tyler, that in every ore vein whatsoever which occurs in a lime bed there must be some crack or fissure in the beds before there can be mineralization?

A. Yes; or a fissured zone, that is a shattered zone, which amounts to a crack in the rocks or several of them.

Q. There must be some fissuring of the rocks?

A. Some fissuring of the rocks.

Q. Before there can be mineralization. The facility with which mineralization occurs is in proportion to the amount of fissuring, is it not?

A. I think largely so; frequently so at all events.

Q. It is true also Mr. Tyler, is it not, that in lime beds where there is a deposition of a mineral vein in lime beds an intrusion of porphyry greatly facilitates the fissuring and this subsequent mineral deposition?

A. That is as the case may be. The porphyry may be entirely subsequent to the deposition of the ore and to the original fissure which made the deposition of the ore possible.

Q. Where the intrusion of the porphyry is first, that greatly facilitates does it not?

A. Sometimes it does; sometimes it does not. It is supposed to be.

465 Q. Don't the authorities say that—Mr. Kent is a good authority, is he not?

A. He is one of them and a good one.

Q. Mr. Emmons is another, is he not?

A. Yes.

Q. Do they not say that the intrusion of porphyry greatly facilitates the formation of ore veins in the lime?

Mr. Dickson: Judge Hiles, if you wish to interrogate the witness about Emmons or any other scientist, we shall claim the right on redirect to refer to the books and see what is said upon the subject as to this particular district.

Mr. Hiles: I have no objection of course.

A. The formation of ore deposits in lime I suppose you mean.

Q. Yes; ore deposits in lime?

A. Well, they say so because in many instances it is the fact. For

instance those at Leadville of which you spoke are almost altogether in direct relation to the porphyry bodies, to porphyry intrusions.

Q. The porphyry intrusions?

A. There is a case where the porphyry according to the concensus of opinion had great influence upon the formation. The deposits are in the limestone—in the adjoining limestone. I know of other occurrences also where the porphyry seems to have been a conducive element of all deposits formed at the contact in all cases with lime; but they are not all of that kind.

Q. In all cases of porphyritic intrusion through the lime beds and the subsequent deposition of the ore, it is true is it not that the lime is displaced and the porphyry is apt to remain and the ore will be deposited against the intruding body of porphyry?

A. That would be the case with contact ore deposits between porphyry and lime. It is the lime which is usually extracted and carried off and replaced by ore, but it is not always the case.

Q. As a rule it leaves the porphyry standing and the ore is deposited against it wherever it stands, is not itself decomposed?

A. I say that is a common occurrence.

Q. That is a common occurrence?

A. But not universal I know of deposits being in the porphyry itself instead of in the limestone, contact deposits.

Q. That is the case where the porphyry has been decomposed?

A. Yes, sir.

Q. By the acids in the waters?

A. And replaced.

Q. And replaced by metals. Now in an ore vein thus made the wall is not well defined, and the fact is that the ore will fade
465 out gradually and get lean as you go away from the fissure or the shattered parts which has been replaced?

A. It does so sometimes; but not universally.

Q. Is it not the universal rule the wall of such an ore vein as that has no sharp distinction?

A. In fact it is the opposite, that it has a pretty sharp definition; deposits in limestone have a pretty sharp definition.

Q. Is it not true in this very limestone belt that these different ore veins that you have described will fade out into the lime?

A. No, not fade out; I would not put it like that. They feather out sometimes, that is they get small. It is quite different, the meaning of the two terms. By feathering out that deposit while still composed of the same minerals, same materials come to an edge and comes to an end. By fading out we mean the rock itself is impregnated with the ore to a less, less, and less degree as you pass out until it is almost an impossibility to say whether the mineralization, how far the mineralization extends before it is gone entirely. That is fading out.

Q. You make a distinction between feathering out and fading out?

A. Feathering out is coming to an edge in the same kind of material, the end of the edge feathers out but it is in the same material to the end of the wedge.

Q. I did not see your diagram which you showed to his Honor. You put here upon the diagram a lode or ore vein which you supposed ran across the Ashland fissure?

A. Well—

Q. And which does lie across the Ashland fissure?

A. Yes.

Q. It is how many feet in length or width?

A. Well, that is supposed to be 180 feet. That is what was mentioned in Court as the extent of the ore body.

Q. Tell me whether that ore body fades out or feathers out?

A. Well, the development has not gone far enough to tell whether it shows at the west end there. I will say I think that it does extend on further until it does wedge out but I do not consider that it fades out in any sense of that word.

Q. Well, it feathers out?

A. As I say the development is not sufficient to know; there is still ore going to the west. This is more irregular to the east.

Q. How does it feather out to the east?

A. Let me see, is our bag of samples down here. I had a piece that is right in point if I can find it. I will show you what I mean by it when they bring down the samples.

Q. You will hereafter explain how it feathers out there? If you will I will not press it now?

467 A. Yes. I have a specimen for the feather edge of one of the ore bodies which will show what I mean.

Q. Now I would like to look at Exhibit KK. Now you said Mr. Tyler that this ore vein out in the Northern Light was isolated, the ore vein out towards the west end of what you call the West drift; that it is isolated?

A. Further developments may show that it is connected. It is an isolated ore body there now.

Q. I ask you if it is not the fact that it is an isolated ore body; it is the fact is it not?

A. As far as we know at present.

Q. Then whether or not it is isolated and will remain so is a matter of speculation and is not a matter of visible and actual demonstration; is not that so?

A. Yes, sir.

Q. Now his Honor asked you how much barren ground there was between the Sampson fissure and the Ashland, what we call the Ashland ore vein?

A. Yes, sir.

Q. Did you ever go along this north drift, what is called the West drift on defendants' map of the Neptune level?

A. Yes.

Q. What is that in?

A. Limestone. The ends of the little branch drifts appear to reach to the quartzite; they appear to be near the quartzite walls.

Q. That drift up there is in fact in quartzite, the end of the upraise?

A. I was never able to get up the face of it; I should judge it is. I saw quartzite at the foot of it that had been broken down.

Q. What is the distance of that West drift in lime?

A. About 120 feet; in that neighborhood. There is ore in this end of it out to that first station.

Q. Now let us proceed Mr. Tyler from station 637 in the West drift and go west into the West drift to the isolated ore body in the Northern Light ground; how many hundred feet of barren limestone do you find in 637 for example to 781?

A. There is a good many feet of limestone there.

Q. A good many feet of barren limestone, several hundred feet of barren limestone?

A. But there may be ore right under it, beyond that, that is over the lode; that is a part of the lode.

Q. Whether there will be or not is a matter of speculation? A matter of speculation until it is developed by workings?

A. That is true.

Q. This isolated ore body in the Northern Light is over on the north side of the mountain, that is to say the north side of Jordan Hill is it not?

468 A. Let me look at these maps here (Ex. t and Ex. S). Well, that would be about the highest point of the hill, the little rocky peak of the Jordan is very close to this point S 49; that is the Jordan Peak and northerly, let us see, northwesterly from that the mountain rises still higher until the top of the mountain would be where I hold my pointer, about here, this is really the top of Jordan Mountain, Jordan Peak is this little rock standing up above the general surface in this position.

Q. That is in the neighborhood of where?

A. It is in the neighborhood of S 49.

Q. Where is the Northern Light ore body with reference to that?

A. Now, that Northern Light ore body is about here.

Q. It is over west on the north side, it is north and west of that point?

A. It is north and west of the point, yes. It is higher up the mountain; it is not over the mountain.

Q. I ask you if it is north and west of this peak?

A. Yes.

Q. This peak of Jordan Hill?

A. Yes; that little peak, yes.

Q. The little peak there is in quartzite, is it not?

A. Quartzite?

Q. There is a band of quartzite running east and west?

A. East and west in the direction of the ore.

Q. It is illustrated on this photograph; look at that. That is the rock peak that is called the Jordan Peak. That is the top of the mountain beyond; Jordan mountain; that is higher.

Q. It is north and west of that peak that this ore body is?

A. Yes, sir.

Q. The quartzite goes along the top of the peak there, does it not, that is so?

A. That is so, but that is a considerable distance underground to the other ore body.

By the COURT:

Q. There is a slight draw there.

A. There is a very slight draw; the picture gives the appearance of a draw but the top of this is not 25 feet higher than the lowest point; it rises up gradually right there.

Q. Now the isolated ore body in the Northern Light is near the fissure, the Ashland fissure, is it not?

A. Well, from the fact I did not find any fissure in there, I do not consider that it is near the actual fissure.

Q. Well, it is near to the projection of the line of the Ashland fissure as given by you on the other map, is it not?

A. No; this would be about the line of outcrop of the Ashland fissure, about as I hold my pointer

Q. But did you not project the Ashland fissure across into the Northern Light ground?

A. Yes, sir; this is a portion of it here and it turns with the hill and goes into the Northern Light ground.

469 Q. Well, is not this ore body in the neighborhood of the Ashland fissure?

A. Well, it is within 200 feet horizontally of it, yes at one side.

Q. 200 feet horizontally of it?

A. If your fissure is where I hold my pointer here, it is 200 feet horizontally over to your ore body.

Q. But you project the fissure into Northern Light ground after it reaches a certain point?

A. I did not project it in there; it is simply because the fissure up there is pointing right along on the top of the ground and extends out there.

Q. It goes in there?

A. I did not mean it goes in there.

Q. But you pointed out of the map to this?

A. Yes; that is right.

Q. As going through into the Northern Light ground?

A. Yes, sir.

Q. So that as it goes north it approaches the point where the ore body is found, the isolated ore body?

A. Yes; that is so.

Q. Then the fact is that it dips to the west, the fissure?

A. The fissure as it is known in the southern part of the ground dips to the west. You do not find developments enough on this surface tracing anywhere to tell how it would dip.

Q. Have you any reason to believe that it dips to the east at any other point?

A. No.

Q. No reason for believing that?

A. No; no reason for believing it.

Q. No reason for believing so and no reason for suggesting that it might dip in any other direction?

A. I did not suggest that it might dip in any other direction.

Q. I did not say you did?

A. I merely made this statement that there was not work enough done to tell the condition in that upper part of the mine.

Q. Is it not reasonable to say that at the point I am interrogating you about, it dips to the west as well as in the southern part?

A. That is quite reasonable.

Q. There is no reason to think to the contrary is there Mr. Tyler?

A. No, sir.

Q. Now I wish to call your attention Mr. Tyler to plaintiff's Exhibit T for a few moments. I first call your attention to an excavation on the Mountain Gem marked 13 in Roman numerals apparently; is that intended to mark that fissure?

470 A. Well, that is one of Mr. Smith's triangulation points. S 220 I think it is.

Q. Were you down in that excavation?

A. I think so; I think I remember going into that.

Q. What is the depth of that?

A. As near as I remember I was down about 25 or 30 feet.

Q. What is it in?

A. It is limestone and the tracing is here along the sides, that is, it is oxidized ore and at the bottom I found some sulphides.

Q. Did you find anything of value in it, any valuable ores?

A. Nothing that I would want to mine myself just now. This is the specimen to which I referred a few moments ago.

Q. I will call your attention to that further on. You found nothing there. I now wish to call your attention to——

A. I cannot say I found nothing; I say I did not find any pay ore.

Q. I beg your pardon if I misstated you; I did not intend to misrepresent what you said. Now I call your attention to S 43?

A. 43.

Q. What excavation is that, what kind of an excavation?

A. It is an excavation, an irregular tunnel driven through limestone, connecting with the shaft near the corner of the Mountain Gem.

Q. Now this tunnel commences near the road, does it not?

A. Near the road which goes up there.

Q. Which goes up the hill?

A. Yes, sir.

Q. Now that is driven, you say, through lime?

A. For the greater part of its distance and the inner portion near the corner of the Gem.

Q. That is through barren lime?

A. It has ore——

Q. It is through barren lime?

A. The outer portion is through barren lime; the inner portion is through ore material.

Q. How much of the tunnel is in ore material?

A. Oh, there might be 12 or 15 feet of it.

Q. Do you say there is ore material 12 or 15 feet further out into this tunnel?

A. Yes, sir; there is vein matter for that much of the way, the red oxide of iron, substantially as it is shown on the map.

Q. Where you strike the ore there do you find any cross fissure?

A. The rock is very much fissured; there are fissures and cracks in all directions.

Q. It is a cross fissure there, is it not?

A. There is a cross fissure there and there is one here.

Q. It is when you approach that little cross fissure that you strike the ore?

471 A. Well, I don't know; it is scattered through a large amount of the rock there where that little fissure is observable.

Q. At all events you did not see anything in this tunnel leading from the road to the shaft or cut until you approached what is a north and south fissure there, did you?

A. No; it must be eight or ten feet away.

Q. Well, you approach it; you have to get in the neighborhood of the fissure before you find anything that looks like ore?

A. Incidentally, you have to go in the neighborhood of the fissure but as a matter of fact you are approaching the tracing streak along there that runs east and west and incidentally you get near the fissure of course as you go that way.

Q. Take station 342; what do you find in that?

A. I find the same material dipping at 40 degrees northwesterly, a few inches wide, two to four inches wide.

Q. That little seam is not connected with the seam to the north and west of that fissure, to the north and west of it as described?

A. Not connected with that fissure.

Q. Not connected with that fissure?

A. It is not connected with that fissure that I know of.

Q. When you get to 344 what do you find there?

A. I found some lime.

Q. Did you find any seam with ore in it?

A. Only a little discoloration or stain.

Q. Just a little discoloration?

A. In the lime; the seams that lie over this tracing seem entirely up in the hanging wall of it.

Q. Can you find any connection between that seam of ore?

A. There is not any seam of ore.

Q. There is no seam there; it is just in solid rock?

A. It is not solid; it is shattered and broken into large blocks with discoloration as I say through it.

Q. That excavation there does not show any seam of ore?

A. At the Jackson incline the excavation shows plenty of the same stain.

Q. I understand you to say there is no connection between this seam which you found at 343 and the fissure which you find at the end or near the end which was within 12 feet of the tunnel at 343; you mean there is no connection by workings, do you?

A. That is what I mean.

Q. Well, is there any connection otherwise than by workings?

A. I suppose there would be some connection; but there are places

where the indications of it are lacking for a good many feet by surface tracings.

Q. Is there a connection?

A. I would not say there was not.

472 Q. I now call your attention to what appears to be a cut S. 332?

A. That is an elevation point.

Q. What is it?

A. That is F I presume.

Q. Is that S. 340. Does that indicate that point?

A. S. 340 would indicate that point.

Q. What is that at F?

A. That is a place from which the surface soil has been removed to the extent of perhaps twelve inches in depth by the defendants in this case.

Q. It is cut in the soil?

A. In the soil.

Q. You say the defendants do it of course?

A. I saw men at work there.

Q. Well, that is inside of Kempton ground?

A. Yes, sir.

Q. Now what did you find there?

A. I found this oxidized iron ore stained soil. And there is this same iron ore in the extension westward and in the extension eastward and I found a trifle of it at that point in the vertical fissure there.

Q. How far does it extend westward in the tracing?

A. It extends practically to S 33.

Q. And then what did you find?

A. There I found a trench at S 322 showing comparative large bodies of surface oxidized ore; there must be six or eight feet of it.

Q. Wide?

A. Disclosed.

Q. That is the point at about where the ore outcropped, what would be called ore commences?

A. Well, yes; that is the only point where any outcrop of any consequence—I mean of any importance in size—has been disclosed.

Q. Going south or east on this map, Exhibit T, I first call your attention to Cut A; that is a large surface excavation?

A. Yes.

Q. Has ore been mined out of there?

A. I think undoubtedly ore was mined out, and portions of it have caved in what were old stopes below undoubtedly. It bears evidence of only having been mined upon the surface, and from having been mined below so near to the surface it has caved down.

Q. You noticed a caving of the earth?

A. Yes; that is true. This large series of stopes represented on Map S comes to just about this line here on Exhibit T.

Q. This cut A is at its southern extremity; in the quartzite, is it not?

A. Yes, sir.

Q. How many feet over into the quartzite?
A. Oh, probably, I can measure it.
Q. Approximately?
A. About 40 feet.
Q. Approximately; that is near enough.
473 A. I will state that is where the big Galena fissure comes in; if this mining here is on the Galena fissure there is more stoping than shown here.
Q. Out into the quartzite?

(3000)

A. Out into the quartzite; that is opened up for 5000 feet out into the quartzite from the porphyry.
Q. So that is true on this lode that you have been testifying about they have been mining ores out of the quartzite?
A. Not on this lode but on the Galena fissure which runs into it and on some other fissures that come up to it.
Q. Wherever the conditions are favorable for producing ore in the quartzite it will be produced in that district just as well in the quartzite as in the lime, will it not?
A. Well, it might be of course; but it does not happen to be.
Q. Well, here is a case where you say that the Galena fissure projects into the quartzite and has been mined?
A. Yes, sir.
Q. And ore taken out evidently haven't they?
A. That is true. That is one case.
Q. So that here you have a fissure vein cutting across and bisecting your supposed continuous lode, have you not?
A. No.
Q. You have not?
A. At least it cannot be traced through. If it had been cut clear through you might say that it had been bisected or cut in two but it cannot be traced clear through.
Q. It is a fact, is it not, Mr. Tyler, a lode in that district can exist just as well in the quartzite, not so large may be, but it exists in the quartzite where the conditions are favorable just as well as in the lime?
A. Certainly; little fissures; in the porphyry as well as in the limestone.
Q. And that is one of them?
A. That is one of them.
Q. This is the Galena?
A. The Galena enters the quartzite there and has been mined in quartzite.
Q. This Galena has been extensively mined and is of many years of age, is it not?
A. I understand so.
Q. Does it not bear evidences from what you saw of being an old mine?
A. Extensive workings and indications of having been mined, it certainly does, yes, sir.
Q. A very old mine. So there is a case where the ore body is in

the quartzite. Is that stratified with the fissure or is the ore body stratified with the strike of the quartzite bed?

A. No, in the drifts out on the Galena you find more or less—stratification is the word you used for it; that means the same
474 thing as the banded structure. That word is more commonly used to denote fissure vein formation.

Q. This point which is marked?

A. Shaft, is it?

Q. It is not marked shaft; but it is 1081.

A. That is the elevation.

Q. I don't know, but this is the point where I put my pencil I cannot designate it any more clearly for the purpose of having it in the record, but this is the point which I have designated as the Galena shaft?

A. Yes, I believe it is.

Mr. DICKSON: We admit That Galena fissure runs in that course to the southwest for a long distance and is mineralized in the porphyry and in the quartzite.

Mr. HILES: Will you admit that ore veins exist in this district in the quartzite cross vein just as well as in the lime?

Mr. DICKSON: We will admit there are cross veins, and we will certainly admit that they exist in the porphyry also.

Mr. HILES: I am very much obliged for the admission but I would like to interrogate the witness a little further.

Mr. DICKSON: Very well.

Q. Now this fissure has been mined from the Galena shaft underneath the Cut A is it not?

A. Up to Cut A at least, underneath the ground up to that point, yes.

Q. It has been mined and ore taken out; is not that true?

A. Practically up to this point, yes. There is a tunnel on that. This is called the Galena Tunnel, this working, and drifts are extended both ways from the tunnel on that Galena vein.

Q. North and south of this Galena fissure and in the quartzite bed?

A. In the quartzite bed going southerly.

Q. Now can you tell how the ore vein comported with the strike and dip of the quartzite bed there?

A. It is nearly a vertical vein and cuts square across there.

Q. The ore stratification was with the vein was it not?

A. Lengthwise. The mine has not been worked since I have been there. That is, I have not been in any of these stopes to see them, but from all the maps of the mine I should say that it comported with the usual habit of fissure veins, that is had the ore bodies running in various directions in the quartzite.

Q. The stratification of the ore body from the shaft out, would you say through the quartzite into the lime, was with the fissure?

A. With the fissure in the quartzite.

Q. With the fissure in the quartzite?

A. In the quartzite. In the lime it is quite different. As you

drift westward, or come northeastward, I would say, along the fissure and come to the lime, there you have got at once a different state of affairs; your ore bodies dip with the lime.

475 Q. And then when you reach this point, the fact is that the ore body widens out, does it not; when you reach the lime it widens out does it not?

A. I think it is several hundred feet wide there of ore in the lime? I did not say that the fissure widens to take in that by any means.

Q. I did not ask that; I asked you if the ore body did not widen when it came into the lime; that is the fact is it not?

A. That is the fact generally there.

Q. Now tell me why the ore body in the Galena widens when you leave the quartzite and come into the lime?

A. No; I do not say that the Galena ore body widens; I said you struck the ore body in that position dipping with the lime and belonging to the lime lode.

Q. But you have said there is an ore body several hundred feet wide in the lime?

A. Several hundred feet long, didn't I say?

Q. Well, when you reach this point here, Mr. Tyler, when you reach the point of contact between the quartzite and the lime then you say that the length of the lode is?

A. East and west.

Q. East and west but up to that point in the quartzite it is north and south?

A. Well, that north and south lode runs as far as the quartzite comes, and as it penetrates the lime it is lost——

Q. The lode then shifts from a north and south strike to an east and west strike?

A. It is a different lode; it is a different lode.

Q. A different lode is it. You go through the quartzite in ore from the Galena shaft until you strike the lime, do you not?

A. Yes, sir; I have been through that work.

Q. And you will find ore all the way?

A. Not very much; a pretty poor fissure.

Q. It is at least as good as the ore in the Mountain Gem, is it not?

A. Well, I would say yes.

Q. And a little better?

A. A little better, yes.

Q. Would go a little better than the Mountain Gem?

A. Yes, sir.

Q. Now where does that lode end on its strike that goes from the Galena shaft north towards the lime?

A. I cannot say. I have been told that something the equivalent of it was struck in the quartzite on the other side across the lime belt but I have not been able to find it; I have not seen it and not found it, and not been able to trace the Galena fissure across the lime belt.

Q. These stopes from the quartzite in Galena ground are continued are they not, north through the lime?

476 A. It undergoes great changes when you come into the lime in that neighborhood. The continuation of them or the

bulk of them are not on or adjoining the Galena fissure as you can see here.

Q. You cannot say then where the Galena lode, as it extends through the quartzite terminates?

A. Except I consider it terminates at the lime.

Q. You consider it terminates at the lime?

A. Yes, sir, and the lime belt itself is a lode running east and west through there.

Q. Now I will ask you Mr. Tyler, suppose that this were quartzite instead of lime from the Galena shaft to the point of contact, is it not true that the forces which were exerted I am now calling your attention to this as a scientist—is it not true that with the forces which were exerted in depositing that ore body in the quartzite that it would be as wide as it is long in the lime as you call it?

A. If it were so it would be so? as a matter of fact it is a very small fissure in the quartzite in this part.

Q. How wide is it?

A. Oh, I should think 18 inches or two feet wide; it is very small comparatively.

Q. Now is it not true that when you reach the quartzite beyond—or reach the lime, that it bellies out, the Galena lode or fissure bellies out in the quartzite and the fissure becomes lost in the mineral deposition which occurs in the lime?

A. I would not say so. There are large stopes or openings lying parallel with the stratification of the limestone, parallel to the lime belt, and the fissure is lost in these stopes whether it was there originally or not.

Q. Now this lengthens out, as you say and as I say it widens?

A. Yes.

Q. Now there is a point here to the west where it becomes lean and there is but little ore, is there not?

A. Well, there is very little; there is not much development and there is not much ore shown in there at the surface and in the workings.

Q. And that is comparatively barren ground, barren limestone, is it not?

A. A portion of the lode is barren.

Q. That is a barren portion of the lode?

A. So far as we at present know, that is at the surface, I mean, but not so underground. In fact it is rather the richer portion of the lode underground.

Q. Is it not evident Mr. Tyler that the Galena fissure when it reaches the limestone widens and bellies out into a larger ore vein?

A. No, sir.

Q. And continues across the lime as represented by Cut B and Cut D into quartzite to the north?

477 A. That does not represent the state of facts to my mind.

Q. Where the vein narrows again?

A. I say that does not represent the state of facts to my mind.

Q. You think that is not the physical and geological fact?

A. Yes or mineralogical fact; it is not a fact of any kind. It is a

fact there are large ore bodies, but that they are a portion of that vein I deny.

Q. Now Mr. Tyler, the quartzite is a harder rock and less susceptible to corrosive influences which have carried away the lime and replaced the lime with mineral; is not that true?

A. As a rule; not always. One case is in the great Ontario mine.

Q. At the Ontario?

A. Yes.

Q. In this neighborhood it is a fact, isn't it true that the quartzite is less susceptible to corrosion and less shattered by the forces which have thrown up these beds and tilted them at various angles?

A. On general principles that is true.

Q. So that it would be more reasonable to suppose that you would find in the Galena fissure when it struck a lime bed that you would find a wider ore body than you would find in the Galena fissure; isn't that so?

A. It might be so; that is not against the possibilities.

Q. You say that you followed the fissure on the other side of the lime bed for the purpose of determining how far into the quartzite it went or whether it went through the quartzite into the lime bed to the north of it; did you do that?

A. I could not find it.

Q. Did you hunt for it?

A. Oh, yes, I hunted the surface over.

Q. How far underground did you go if at all, beyond Cut B?

A. Cut D is at a great cave, all caved in and the works all gone together mostly; the tunnel level is open from there for a good part to the point of my pointer, but the country to the east at the surface and to the north is covered by a very deep debris slide and soil, and further on we find porphyry beyond this point (indicating).

Q. So that if the fissure did continue in that direction upon the surface of the earth it would be covered up with slide so that you would be unable to see it?

A. But you could find it in these workings as you pass through; as a matter of fact it is supposed to pass through the inner end of the Lowe tunnel.

Q. Supposed to?

478 A. The old Lowe tunnel. I have not been able to get into it but I am told that the fissure cut into the end of the Lowe tunnel, which is taken to be a continuation of the Galena in the quartzite on that side.

Q. If it is down there it has apparently been eroded at sometime?

A. No; I think not. The gulch runs up in that belt here.

Q. So that you have reason to believe that the fissure continues?

A. I won't say it continues through the lime or deny it.

Q. You have reason to believe it continues to the north when you get to the quartzite?

A. Shall I tell you the reason?

Q. I do not want the reason.

A. I have reason to think it does from the fact that I think there was a faulting of the formation along the fissure and as long as it

was faulting along that fissure, of course it is very likely that it passes right through there.

Q. Have you any reason to believe it continues on to the north through the quartzite into the lime beds to the north?

A. It might be; I have not studied it. I don't know anything about it.

Q. What is your opinion from your knowledge of the situation there?

A. I would not give any opinion upon that.

Q. Have you an opinion?

A. Not having as I say studied out that part of the country.

Q. You would give us an opinion as readily as you would to counsel for the plaintiff?

A. Oh, certainly. I have not made up any opinion.

Q. So that you will not give any opinion; do you mean thereby that you have no opinion?

A. It means I have not made up my mind as to whether it goes on or whether through the fracturing of the country it has been stopped.

Q. I will ask you what is your best judgment as to that?

A. My best judgment is that it runs to the other lime probably.

Q. That is your best judgment?

A. Yes, sir.

Q. You have no reason to believe that it does not run through the quartzite into the other lime?

A. No good reason no.

Q. The bedding planes of the lime dip to the north?

A. Well, where they are observable, they have a northerly dip.

Q. Where they are observable?

A. That the bedding as a whole dips to the north, as I say with this irregularity of the roll—the rolling or wavy nature of it.

479 Q. Now Mr. Tyler, I call your attention to the stope called the Jones stope and Piper stope; did you ever examine that country?

A. As far as I could get into it in through this red level; we could get to the edge of it; it is not very easily accessible at the present time. I could get to the edges.

Q. You could not get inside?

A. No.

Q. Could you not see the tunnel called the Mill tunnel which enters the earth at a point marked on the map 267?

A. Yes.

Q. When you got to the Jones stope could you observe that there had been extensive stoping there?

A. The level was apparently retimbered through an old caved stope; you could see through the timbers but back of it was caved material.

Q. Indicative of some extensive mining there?

A. Yes, sir.

Q. Is not that on a north and south course, that stope?

A. On a northerly and southerly course through there.

Q. That is in quartzite is it not?

A. No, sir.

Q. What is it in?

A. Limestone, altered limestone, that is, limestone which has been replaced by silica, making it vein silica, as we call it vein rock.

Q. Did you examine the surface on top? The surface, that is the ground on top?

A. Yes, sir.

Q. Was there any quartzite on the surface?

A. There is quartzite further to the north but where these great caves exist now everything is caved down, and most of this rock now standing on the sides of the cave is this marbleized lime, and amorphous silica which has replaced the lime.

Q. Amorphous silica; what is the difference between that and quartzite?

A. Quartzite is composed of grains of sand but crytalline and water worn. In the quartzite the grains are cemented together by lime, or perhaps amorphous silica.

Q. What is amorphous silica?

A. Not crystalline, unerystallized. For instance silica was deposited or precipitated from alkaline solutions and thrown down in an amorphous condition not crystalline; and that is the bulk of the material that is called by miners up there chert.

Q. Amorphous silica is not lime?

A. No, it is a replacement of the limestone. There is practically no lime in this east end of the working, but the lime has been entirely replaced where it is not ore, by this silica, which the miners call chert; and it is quite distinct from quartzite.

480 Q. In this part of the country the mining is not in lime but it has been done in a material which has replaced the lime, and been mineralized; is that true?

A. Well, it forms the gangue of the great ore body which surrounds it, but the ore body is nearly an entire replacement by sulphides while this is a replacement by silica of the lime.

Q. So that you have not a continuous lode of lime from the Jones stope out to the Ashland tunnel, have you?

A. No; we have a continuous lode of what was originally a complete lime bed throughout the whole exten, but in the neighborhood of the greatest mineralization the entire mass of the lime has been removed and as I say replaced by silica.

Q. The entire mass of the lime has been removed and replaced by silica amorphous silica as you call it?

A. Yes, sir.

Q. And then it has been mineralized?

A. No; probably both operations went on at the same time.

Q. May be so?

A. Probably so; in part of the lode silica would be deposited and would be found and in other parts of the lode ore would be deposited; there was a solfataric action in there.

Q. So that when the miner went to work there he did not go in to

work in the limits of a lime bed but he went to work in the quartzite or amorphous silica?

A. Not quartzite; amorphous silica.

Q. What is the chemical difference between amorphous silica and quartzite?

A. Quartzite s a silicious rock; it is a sandstone, quartzite is.

Q. It contains silica?

A. Of course; it is 95 per cent silica and from that on up.

Q. It is first a sandstone and then by the introduction of silica it becomes quartzite?

A. By some metamorphosing process it becomes quartzite.

Q. Whatever the metamorphosis may be it is after silica has been introduced into the sandstone, is not that true?

A. Well, if it happens to be silica that is the binding or combining material it would be; if it happens to be lime that is the combining material it is not; it all varies.

Q. It would all be quartzite?

A. It would all be quartzite.

Q. Well, sandstone which has been changed to quartzite has silica in it, has it not?

A. Any amount of it.

Q. A great deal of it?

A. From 95 to 99 per cent.

Q. A very great percentage of silica. So a sandstone with another stone that has been changed to what you call amorphous silica has had introduced into it before it becomes amorphous silica a large amount of silica?

481 A. Oh no; it is crystalline silica.

Q. Crystalline silica; is it pure quartz?

A. Nearly pure quartz.

Q. What is the combining part, what combines these parts of pure silica and makes the metamorphism?

A. These little grains of sand.

Q. So, that after all the quartzite and the amorphous silica are chemically very nearly alike?

A. Chemically they are about the same, but amorphous silica generally has more or less water in it.

Q. Why therefore do you make the fine distinction and say that this is not quartzite?

A. Because it is not; that is right. It does not happen to be quartzite.

Q. I will ask you if the distinction is not a finer one than the ordinary miner would make or the man who is not a scientific man, a man going along through the country there who is not an experienced geologist like yourself, would say that is quartzite, wouldn't he?

A. He might think so.

Q. He might think so and he would say so and practically he would be right?

A. Oh, no.

Q. Scientifically he would be wrong but practically he would be right, would he not?

A. No; he would not be practically right.

Q. Mr. Tyler I wish you would come here to this Exhibit T. Now I call your attention to a point on Exhibit T west of the Mill tunnel, where there is a blue line drawn on the map with an arrow head?

A. I notice it.

Q. I will ask you if you know of a road near that point which leads towards the Commercial mine?

A. Yes; I know of a road leading around, following the gulch partially and right past the Commercial and on up to the Northern Light. This is the gulch you know.

Q. This is the gulch and how is the road with reference to the gulch; on the north side or east side of the gulch?

A. It is generally on the east side; it runs along about up in that neighborhood.—well, it branches off more to the right, one branch going to the Orphan Boy tunnel and one goes over here.

Q. I will ask you if where you have marked the lime on this map the road does not run along through the quartzite, and if there is not quartzite showing on the upper bank of the road?

A. There is quartzite right at the point where I hold my pointer now and here practically to the gulch and this is as far as I know of the quartzite there, for this country is as I say, covered with debris and all that.

482 Q. Now when you come down this way, don't you come into quartzite down towards what is called the tracing incline?

A. The tracing incline?

Q. Yes.

A. You have quartzite here at this point to the north of the mill building, as represented.

Q. You have the quartzite foot wall?

A. This portion of it in the north east corner is lode matter, gossan.

Q. What do you mean by lode matter, lime?

A. No, iron here.

Q. You have got it marked what?

A. Oh, it is all marked the lode is all marked blue all the way through but I consider the amorphous silica as forming a part of the lode just as much as the limestone and which has replaced the limestone.

Q. The truth is that at some point here you leave the amorphous silica and get into the lime?

A. We have got amorphous silica at various points but not a great deal; you get it up in the Kempton mine also.

Q. The amorphous silica exists at points indicated by the blue shade on the map?

A. At various and very many points it is found.

Q. I will ask you to look at this tunnel called the Mill tunnel and ask you if you have ever been in there?

A. Yes, sir.

Q. What is that in?

A. That is in lime and this amorphous silica vein silica, that right branch, vein quartz, vein silica, amorphous silica.

Q. And that extends from the amorphous silica from there does it go into the quartzite?

A. One branch reaches the quartzite as I show you on this map at this point. Here you have the quartzite and it is ore from here, and this part is through some ore and the balance is amorphous silica.

Q. You get ore when you get here on the cross vein and amorphous silica?

A. I don't know whether it is a cross vein or not. It is an immense body of ore.

Q. And porphyry on here into the quartzite?

A. No, sir; the porphyry quits when you come to the quartzite.

Q. How far into the quartzite does the tunnel extend?

A. Four or five feet.

Q. Do you know the Jackson incline which is on your Exhibit KK; may be it appears here on this Exhibit S?

A. I think it does; this is it.

Q. What is that run on? In the way of a fissure?

483 A. That is run on a fissure in the limestone.

Q. What is it called?

A. The fissure.

Q. Yes.

A. I do not know any name for it except Jackson.

Q. It appears as a tunnel?

A. The Rip Van Winkle tunnel.

Q. Yes.

A. The Rip Van Winkle tunnel runs in as a cross cut.

Q. It connects with the fissure there, does it not?

A. It connects with a flat ore body there. It is about thirty feet thick.

Q. After you get through the ore what do you proceed on?

A. It proceeds on an incline into the ground following this 40° dip of the ore body.

Q. Is it in quartzite or lime?

A. It is in limestone.

Q. Now the Jackson incline you say is in lime?

A. It is in limestone.

Q. It is a fissure is it?

A. There appears to be a fissure there and some stopes or drifts have apparently been drifts out from the incline both under the incline and over it.

Q. It has walls, has it, the fissure?

A. Well, it has walls but not very elegantly defined walls.

Q. You said there was ore in that Jackson incline?

A. Yes, sir.

Q. What was its structure with reference to the fissure?

A. Well, it is this oxidized ore; it occurs in the oxidized zone it consisted mostly of soft ochre, possibly there is some lead carbon-

ates or was at one time when they gophered it out, but the structure is mostly lost in the oxidizing process which has softened it up.

Q. It has no structure at all. How wide is this oxidized material?

A. From six inches in places to a couple of feet of it.

Q. A couple of feet of it and then you come up against the walls?

A. Well, we have walls—we found a chute through it and walls on either side of this chute.

Q. What do the walls consist of?

A. Limestone.

Q. The material is plated against the limestone walls?

A. Well, it may have been so once, probably in the sulphide state it would show so but for many years it has been undergoing a change and is softer now.

Q. Is it an ore vein?

A. I consider it an ore vein, one of the ore veins in the limestone.

Q. And what is the dip of the vein?

A. It is probably 85° to the west, or very nearly vertical.

Q. So that is one of the veins that exist in the limestone lode that you have been testifying to?

A. Yes.

484 Q. They exist there?

A. Yes; one of the ore veins or ore bodies which do not appear to go out of the limestone.

Redirect examination.

By Mr. DICKSON:

Q. Have you undertaken to trace the workings of the Jackson incline as drvien to the north to see whether penetrated by the quartzite or cut by any of these levels by which it would be cut off, if it went north of the limestone?

A. I did not find it in any of these lower levels.

Q. Do you want to be understood when you called it an ore vein as meaning that it has an individuality by which you could distinguish it from the vein which you call the limestone vein to, say that it is a separate vein from that?

A. Not at all; it is just one of the many fissure like ore bodies that are contained within the main lode. As stated here we have fissures in many different directions in the lime itself, which do not seem to go out of the lime.

Q. In speaking on cross examination about amorphous silica you spoke of its close resemblance in chemical composition to quartz. I will ask you if chemically there is any closer resemblance between amorphous silica and quartzite than there is between pure anthracite coal and the purest diamond?

A. No more difference.

Q. And yet they are both composed of the same thing, carbon?

A. Both the same; in each case they — of the same chemical composition.

Q. But anybody would have no difficulty in distinguishing a diamond from coal?

A. I think not.

Q. Although not a scientific man? Assuming that where you have the Ashland fissure at the surface to be 215 feet horizontal to where you encounter this ore body that has been frequently referred to under the Fairview and Northern Light and that the vertical distance between the two at this point on the 100 foot level is 515, I will ask you if the line between these two points would not be approximately 700 feet where you had the apex on the surface of the Ashland down to where this ore body is?

A. Yes; I would say it is approximately 700 feet.

Q. I do not care to take time to have it figured out exactly—the map will show what it is. Here is this contour line 1680 this is 1640 and midway between them would be 1560—the No. 1 level is 1022; assume the vertical distance to be 553 feet, what would the horizontal distance be from the point on the apex at right angles?

A. 215.

Q. The shortest line would be what?

485 A. It would be very close to 600 feet.

Q. And between that point on the apex of the Ashland fissure, there are no workings beneath in the direction of these ore bodies that you know of?

A. I know of none.

Q. That would be a mere guess as to how near the fissure might be to that ore body on that level?

A. Yes, sir.

Q. How is that ore body on that level dipping?

A. Well, the fissure dips to the west as I understand; the fissure exposed dips to the west from the surface.

Q. Wherever seen it is dipping to the west?

A. Wherever seen it is dipping to the west.

Q. How does the ore body dip?

A. Dips to the east, in a reverse position at an angle of 45 or 40 degrees.

Q. In this belt of limestone that you call the vein there are places where there is barren lime?

A. There are places where there is no ore and the belt of limestone is very much altered, metamorphosed, changed, silicified.

Q. If it is a vein it has barren places in it?

A. Yes, sir.

Q. Now the silica that has been introduced into the lime by the way of replacement, what is your opinion when that happened, that it come up in solution at the time the metals come up?

A. Yes; I think that that came up with the solutions.

Q. And replaced the lime?

A. With silica in some places and ore in other places.

Q. Silica is nothing more than quartz?

A. Nothing more than quartz.

Q. And is given that name by being deposited in the way of replacement rather than in any other form?

A. Yes; amorphous silica.

Q. Would you call every zone of mineralized rock that you might find in any given mining district one and the same lode?

A. Why, no as I understand that question he referred to a whole mining district, that it would be considered in the light of a zone, a mineral zone.

Q. On cross-examination you were asked what distinction you made between fading out and feathering out and you said you had a sample of rock by which you would illustrate the feathering out?

A. This is the sample. As a matter of fact it is a toeing out or feathering out at the easterly point of that particular ore body under discussion. The dip of the vein 40° vein strikes in this direction where my pencil is at the point T 5 on the purple level opposite the other branch of it; here it is; the workings quit here and the ore goes on to that point.

Q. How do you know that it goes on?

486 A. Because it is visible.

Q. State whether or not it is the foot wall of the ore body?

A. It is the foot wall of the ore body. There is another flat lying ore body at this point but it is only six inches to two feet thick and as I say at the bottom of the level it comes to a stop like this, or wedges out.

Q. It is ore right up to the lime?

A. Yes; right up to the lime.

Q. It is not a fading out?

A. Not a fading out.

Recross-examination.

By Mr. HILES:

Q. I will ask you whether or not metamorphosed silica can be deposited in the absence of lime or whether lime is necessary for its depo-sition?

A. It may also be deposited in the absence of lime. Lime is one of the precipitants which do cause amorphous silica to be precipitated from solution.

Redirect examination.

By Mr. DICKSON:

Q. I call your attention Mr. Tyler to a book called Genesis of Ore Deposits containing articles by Voncotta, Emmons, and others at page 450 in an article by Mr. Emmons on these ore bodies that are in this West Mountain mining district and will read a passage and ask you if it accords with your observation. "And these ore bodies occur as a replacement of certain limestone beds in the great series of quartzites that are cut by intrusive bodies of porphyry and have subsequently been faulted."

A. Yes, sir; that is my observation.

Mr. DICKSON: We offer now formally all of the maps as exhibits

that have been used on the trial and been marked on the part of plaintiff.

The COURT: They will be received. Does that complete your evidence.

Mr. DICKSON: Yes, sir.

And thereupon plaintiff rested its case in rebuttal and the Court took an adjournment until Monday morning the 27th day of October, 1902, at 9:30 A. M.

And thereupon said defendants, to further maintain the issues on their part, gave in evidence in sur-rebuttal, the following, that is to say:

Mr. ROGERS: In connection with the offer of the paper title the other day, we desire to supplement the offer. We offer the
487 assignment of the lease from Junius F. Wells to Heber M. Wells, dated December 6th, 1901.

There being no objection, the same was received in evidence and marked "Exhibit 25, J. W. C."

EXHIBIT "25."

Assignment of Lease.

For and in consideration of the sum of Two thousand dollars to me in hand paid, receipt of which is hereby acknowledged, I, Junius F. Wells, of Salt Lake City, Utah, hereby sell, convey, transfer, assign and set over to Heber M. Wells of the same place, all my right, title and interest to a certain lease made and dated New York, August 1st, 1901, in my favor by the owners, William J. Harvey of New York and E. Balbach, Jr., of Newark, New Jersey, of certain mining property in Bingham Canyon, Utah, known and described in said lease as the Neptune-Kempton mine, copy of which lease is hereto attached; together with all my right, title and interest in a bond for a deed to said property; also all my right, title and interest in a certain agreement concerning said lease and bond made by and between myself, Enos A. Wall and Heber M. Wells for himself and Thomas Kearns, dated Salt Lake City, Utah, the 6th of November, 1901, copy of which is attached hereto.

Witness my hand and seal this Sixth day of December, 1901.

JUNIUS F. WELLS.

STATE OF UTAH, *County of Salt Lake, ss:*

On this 6th day of December, 1901, before me personally appeared Junius F. Wells, known to me to be the same person who executed the foregoing instrument, who acknowledged that he executed the same, freely and voluntarily and for the uses and purposes therein mentioned.

HENRY T. McEWAN,
Notary Public.

[SEAL.]

My commission expires Dec. 15th, 1904.

Indorsed: 159929. Assignment of Lease. Junius F. Wells to Heber M. Wells. Dec. 6, 1901. Recorded at request of Stanley Ensign July 14, 1902, at 5 P. M., in Book "E" Mining Claims, page 337. Thomas Alston, Recorder, Salt Lake County, Utah. By John Holt, Deputy.

Filed in U. S. Circuit Court, District of Utah. Oct. 27, 1902. Jerrold R. Letcher, Clerk.

488 Mr. ROGERS: In the same connection we offer in evidence an agreement of Harvey and Balbach, lessors, granting permission to Junius F. Wells to assign said lease and Mr. Sutherland waives proof of the signatures.

There being no objection, the same was received in evidence, and marked "Exhibit 26, J. W. C."

EXHIBIT "26."

Knevals & Perry, Attorneys at Law, 34 Nassau Street, New York, Mutual Life Building.

Sherman W. Knevals,
Dudley Phelps,

James W. Perry,
William T. Lawson.

OCTOBER 24TH, 1901.

Mr. Junius F. Wells, Salt Lake City, Utah.

DEAR SIR: Referring to the lease to you of the Neptune and Kempton Mining Property, situated in Bingham Canon, Utah, we hereby give to you permission to assign said lease or to sub-let any portion of the property contained in said lease.

Yours very truly,

WILLIAM J. HARVEY.
E. BALBACH, JR.

Filed in U. S. Circuit Court, District of Utah. Oct. 27, 1902. Jerrold R. Letcher, Clerk.

Mr. ROGERS: We now offer in evidence certified copies of the deeds of George R. Maxwell, late Marshal of the United States to George M. Scott, dated September 7th, 1876, conveying the Kempton mine, also deed of George R. Maxwell late U. S. Marshal, to George M. Scott, dated September 8th, 1876, conveying the Kempton and Neptunes mines, also deed of Michael Shaughnessy, marshal of the United States to Albert Hagan, dated April 28th, 1879, conveying the Neptune and Kempton mine, it being agreed by Mr Sutherland that the Certificate to them by the Utah Savings & Trust Company is sufficient and waiving certification by the County Recorder of Salt Lake County.

There being no objection, said certified copies were received in evidence and marked "Exhibit 27, J. W. C., Exhibit 29, J. W. C." and "Exhibit 28, J. W. C." respectively.

489 EXHIBIT "27."

This indenture made this seventh day of September A. D. 1876 between George R. Maxwell late United States Marshal for the Territory of Utah party of the first part and George M. Scott of the City and County of Salt Lake in said Territory party of the second part, Witnesses: That whereas in and by certain judgment and decree made and entered the 20th day of October, A. D. 1875, by the District Court in and for the Third Judicial District of said Territory of Utah in the action of George M. Scott, plaintiff against Isaac Schoenberg defendant, tested the 9th day of December, A. D. 1875 and to said Marshal directed and duly delivered commanding him to sell the property hereinafter described at public auction according to law, to apply the proceeds of said sale towards the satisfaction of the judgment in said action or by said judgment, reference being thereto had more fully appears; and whereas in pursuance of said judgment the said Marshal did duly levy on and on 31st day of December, A. D. 1875 at 11 o'clock in the forenoon at front door of the Court House in the City and County of Salt Lake in said Territory, did duly sell the premises hereinafter described at public auction according to law, to the said party of the second part, who was the highest bidder therefor, for the sum of Twenty five dollars which was the highest sum bid and whole price paid therefor, the said Marshal having first given due notice of the time and place of said sale according to law.

And whereas the time allowed by law for the redemption of said property has expired without such redemption having been made:

Now, therefore, the said George R. Maxwell late U. S. Marshal as aforesaid in pursuance of said judgment and the law, and in consideration of the payment to him of the said sum of Twenty five dollars the receipt whereof is hereby acknowledged, has granted, bargained, sold, conveyed and confirmed and by these presents does grant, bargain, sell, convey and confirm unto the said party of the second part, his heirs and assigns forever, the real estate in said judgment described, to-wit: All the right, title, interest, claim and estate which said defendant Isaac Schoenberg held on 11th day of May, A. D. 1875 or thereafter acquired in or to those certain mines situated, lying and being in Bingham Canyon, West Mountain Mining District, County of Salt Lake, Territory of Utah, located, known, recorded and patented as the Neptune and Kempton Mines.

To Have and To Hold the same with the tenements, hereditaments and appurtenances thereunto belonging or in any wise
490 appertaining, to the said party of the second part, his heirs and assigns forever.

In Witness Whereof said party of the first part has hereunto set his hand and seal the day and year first above written.

GEO. R. MAXWELL. [SEAL.]
Late U. S. Marshal.

Signed, Sealed and Delivered in the presence of,
E. T. SPRAGUE.
J. W. GREENMAN.

TERRITORY OF UTAH, *Salt Lake County, ss:*

On the seventh day of September, A. D. 1876, personally appeared before me Ezra T. Sprague, Clerk of the Supreme Court in and for said Territory George R. Maxwell, late U. S. Marshal of said Territory to me personally known to be the person described in and who executed the foregoing instrument, and he acknowledged to me that he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

In Witness Whereof I have hereunto set my hand and affixed the seal of said Court at the City and County of Salt Lake in said Territory the day and year in this Certificate above written.

[SEAL.] EZRA T. SPRAGUE,
Clerk Supreme Court.

Filed Sept. 14th, 1876, at 12 M. Recorded Sept. 19, 1876. (In Book "I", page 33, Mining Records of said County.)

STATE OF UTAH, *County of Salt Lake, ss:*

Utah Savings & Trust Co., a corporation of Utah, Licensed Abstractor of Titles in and for said County, does hereby certify that the foregoing instrument attached hereto is a full, true and correct copy of the Marshal's Deed as recorded in Book "I", page 33, of the Mining Records of Salt Lake County, State of Utah.

In Witness Whereof said Company has caused this certificate to be signed by its Manager and its Corporate Seal to be hereunto affixed at Salt Lake City, Utah, this twenty-fourth day of October, A. D. 1902.

[SEAL.] UTAH SAVINGS & TRUST CO.,
S. H. Lynch, Manager.

Filed in U. S. Circuit Court, District of Utah. Oct. 27, 1902. Jerrold R. Letchter, Clerk.

491 EXHIBIT "28."

This Indenture made the 28th day of April A. D. 1879 between Michael Shaughnessy United States Marshal for the Territory of Utah, party of the first part, and Albert Hagan of the City and County of Salt Lake in said Territory party of the second part, witnesseth whereas in and by a certain order of sale issued out of the District Court for the Third Judicial District of said Territory of Utah in the action of George A. Jackson plaintiff against Benjamin M. Du Rell and others defendants duly entered made and attested on the 1st day of October A. D. 1878 and to this said Marshal duly directed and delivered commanding him to sell the property hereinafter described at public auction according to law and to apply the proceeds of such sale towards the satisfaction of the judgment in said action amounting to the sum of two thousand seven hundred eighty-

two and 46/100 dollars, with interest and costs of suit as by said order of sale reference being thereto had more fully appears; And Whereas in pursuance of said order said Marshal did duly levy on, and on the 26th day of October, A. D. 1878 at 12 o'clock noon, at the front door of the County Court House of said county of Salt Lake, did duly sell the premises hereinafter described at public auction according to law to the said party of the second part who was the highest bidder therefor for the sum of two thousand eight hundred thirty-seven and 30/100 dollars which was the whole price paid by the said party of the second part for the same, the said Marshal having first given due notice of the time and the place of said sale according to law: And whereas said party of the second part thereupon paid the said Marshal said sum of money so bid and said Marshal thereupon made and issued the usual certificate in duplicate of said sale, and delivered one thereof to said purchaser and caused the other to be filed in the office of the County Recorder of said County of Salt Lake, and whereas the time allowed by law for the reduction of said property has expired and no redemption has been made:

Now, therefore, the said Michael Shaughnessy United States Marshal for said Territory in pursuance of the order of said sale and of the statute in such cases made and provided and for and in consideration of the payment to him of the aforesaid sum so bid, receipt whereof is hereby acknowledged, has granted, bargained, sold, conveyed and confirmed and by these presents does grant, bargain, sell, convey and confirm unto said party of the second part, his heirs and assigns forever, real estate and property in said order and below described, to-wit: The Neptune and Kempton mine or mines situated in West Mountain Mining District, Salt Lake County, Utah Ter-
482 ritory, described as follows, to-wit: Beginning at corner No. 1, post 4x4 inches in size, marked U. S. 55 No. 1, thence south 14° 30′ west 60 feet to post 4x4 in size intersection of the southerly boundary of survey No. 33, made for the claim of George Hardie upon the Northern Light Mining Claim 200 feet to corner No. 2, post 4x4 inches in size marked U. S. 55 No. 2, thence south 75° 30′ East 285 feet to corner No. 3, post 4x4 inches in size marked U. S. 55 No. 3, thence north 71° 30′ east 195 feet to corner No. 4 post 4x4 inches in size marked U. S. 55 No. 4, thence north 51° 30′ east 584 feet to corner No. 5, post 4x4 inches in size marked U. S. 55 No. 5, thence north 14° 30′ east 336 feet to corner No. 6 post 4x4 inches in size marked U. S. 55 No. 6, thence south 51° 30′ west 814 feet to corner No. 7 post 4x4 inches in size marked U. S. 55 No. 7, thence South 71° 30′ west 100 feet to corner No. 8 post 4x4 inches in size marked U. S. 55 No. 8, thence north 75° 30′ west 67 feet to post 4x4 inches in size at point of intersection with easterly boundary of said survey No. 53 222 feet to the place of beginning, containing 4 acres 88 100 of an acre of land more or less. The said premises so described are exclusive of any portion of the surface ground hereinbefore described which is embraced by the said survey No. 53. From discovery shaft on said Kempton mine U. S. Mineral Monument No. 1 bears north 89° 15′ east at the distance of 975 feet. Neptune shaft bears north 63° 30′ west distant 82 feet; Prince Albert shaft bears north 6° 30′

east at 70 feet distant. That portion of the Kempton mine herein included is described as follows, to-wit: Beginning at discovery shaft on said Kempton mine thence north 51° 30S east 700 feet to the easterly end of claim and from said discovery shaft south 71° 30′ west 150 feet to a point from the Neptune discovery bears south 32° 30′ east distant 100 feet, thence from said point north 75° 30′ west 250 feet to the westerly end of said claim embracing 1100 linear feet along the line of said Kempton claim also one certain Tunnel the said Tunnel is commonly known and called the Lower Neptune Tunnel and is situated in said District County and Territory the mouth thereof being about 350 feet distant in a southeasterly direction from the Neptune & Kempton discovery shafts and running northwesterly toward and under said shaft at about 300 feet beneath therein from the surface and is about 440 feet in length by six feet high and 4 feet wide and was located on the 2nd day of June, 1873.

Together with all and singular, the hereditaments and appurtenances thereunto belonging or in any wise appertaining to have and to hold same unto said party of the second part his heirs and assigns forever.

493 In Witness Whereof the said party of the first part has hereunto set his hand and seal the day and year first above written.

M. SHAUGHNESSY,
U. S. Marshal. [SEAL.]

Signed, sealed and delivered in the presence of
E. T. SPRAGUE.
L. B. S. MILLER.

TERRITORY OF UTAH, *County of Salt Lake, ss:*

On this 29th day of April, A. D. one thousand eight hundred and seventy-nine personally appeared before me E. T. Sprague, Clerk of the Supreme Court of the Territory of Utah, Michael Shaughnessy, United States Marshal for Utah Territory, personally known to me to be the person described in and who executed the foregoing instrument and duly acknowledged to me that he executed the same freely and voluntarily and for the uses and purposes therein mentioned and as such Marshal

In Witness Whereof I have hereunto set my hand and affixed the seal of said court the day and year in this certificate above written.

E. T. SPRAGUE.
[SEAL.] *Clerk of the Supreme Court,*
Utah Territory.

Recorded May 1st, 1879 at 4.30 P. M. (In Book "J," pages 458-9-60.)

STATE OF UTAH, *County of Salt Lake, ss:*

Utah Savings & Trust Co., a corporation of Utah Licensed Abstractor of Titles in and for said County does hereby certify that the

foregoing instrument attached hereto is a full, true and correct copy of the Marshal's deed as recorded in Book "J" at pages 458-9-60 of the Mining Records of Salt Lake County, State of Utah.

In Witness Whereof, said Company has caused this certificate to be signed by its Manager and its Corporate Seal to be hereunto affixed at Salt Lake City, Utah, this twenty-fourth day of October, A. D. 1902.

UTAH SAVINGS & TRUST CO.

[SEAL.] S. H. LYNCH, *Manager.*

Filed in U. S. Circuit Court, District of Utah. Oct. 27, 1902. Jerrold R. Letcher, Clerk.

494 EXHIBIT "29"

This Indenture made this eighth day of September, A. D. 1876 between George Maxwell late United States Marshal for the Territory of Utah party of the first part and George M. Scott of the City and County of Salt Lake in said Territory party of the second part, witnesses: whereas by virtue of writ of execution issued — of and under the seal of the District Court of the Third Judicial District of said Territor, tested the 10th day of January A. D. 1876 upon a judgment recovered in said court on the 20th day of October, A. D. 1875 in favor of George M. Scott, plaintiff against Isaac Schoenberg defendant to the said Marshal directed and delivered commanding him that out of the personal property of said judgment debtor, he should cause to be made certain moneys in said writ specified, and if sufficient personal property of said judgment debtor could not be found then he should cause the amount of said judgment to be made out of the real property belonging to said judgment debtor: And whereas because sufficient personal property of said judgment debtor could not be found whereof the said Marshal could cause to be made the moneys specified in said writ, the said Marshal did in obedience to said command, levy on, take and seize all the right, title, claim and interest which said judgment debtor had in or to the lands, tenements, real estate and premises hereinafter particularly set forth and described with the appurtenances, and did on the 2nd of February A. D. 1876 sell all the right, title, interest and claim of said judgment debtor in or to said premises at public auction, at the front door of the Court house in the City and County of Salt Lake, in the said Territory at 12 o'clock noon of that day after having first given due notice of the time and place of such sale according to law, at which sale all said right, title, interest and claim of said judgment debtor in or to said premises were struck off and sold to said party of the second part for the sum of six hundred fifteen dollars, the said party of the second part being the highest bidder, and that being the highest sum bid for the same. Whereupon, the said Marshal, after receiving from said purchaser said sum so bid, gave the said party of the second part such certificates of sale as is by law directed to be given, and duplicates thereof were duly filed by said Marshal in the office of the County Recorder of said County of Salt Lake

And whereas, six months after said sale had expired without any redemption of said premises having been made,

Now therefore, this Indenture witnesses; that said George R. Maxwell, late United States Marshal as aforesaid, by virtue of the
495 said writ, and of the law, for and in consideration of the said sum of money so paid as aforesaid, the receipt whereof is hereby acknowledged, has granted, bargained, sold, conveyed, and confirmed and by these presents does grant bargain, sell, convey and confirm unto the said party of the second part, his heirs and assigns forever, all the rights, title, interest and claim which the said judgment debtor Isaac Shoenberg, had on the tenth day of January, A. D. 1876, or thereafter acquired in or to those certain pieces or parcels of land and premises described as follows, to-wit: The Surface ground embraced in the patent of the Government of the United States to said Isaac Schoenberg and others for the Kempton lode or mine situated in West Mountain Mining District, Salt Lake County, Utah. Said patent being of record in the Recorder's Office of said Salt Lake County, hereby referred to for more particular description and including and embracing 4.88.100 acres of ground the plot whereof is also designated Mineral survey No. 55 of said West Mountain Mining District, in the Surveyor General's Office of said Territory. Also one mill site and water right situated in the gulch below the Kempton mine more particularly described on page 181 of Book "K" of location notices of the West Mountain Mining District records. Also one boarding house, one dwelling house, office and assay office built on said mill site, also one stable called the "Neptune stable" near said mill site, and the ground on which said stable is built; all situated in West Mountain Mining District, Salt Lake County, Utah Territory.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining.

To have and to hold the same unto the said party of the second part, his heirs and assigns, forever, as fully and absolutely as said Marshal can by virtue of said writ and the law convey and confirm the same.

In Witness Whereof, said party of the first part has hereunto set his hand and seal the day and year first above written.

GEO. R. MAXWELL. [SEAL.]
Late U. S. Marshal.

Signed, Sealed and Delivered in the Presence of
E. T. SPRAGUE.
J. W. GREENMAN.

TERRITORY OF UTAH, *Salt Lake County, ss:*

On the 8th day of September, A. D. 1876, personally appeared before me Ezra T. Sprague, Clerk of the Supreme Court in and for said Territory, George R. Maxwell, late U. S. Marshal of
496 said Territory, to me personally known to be the person described in and who executed the foregoing instrument, and

he acknowledged to me that he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

In Witness Whereof I have hereunto set my hand and affixed the seal of said court the day and year in this certificate above written.

[SEAL.] EZRA T. SPRAGUE,
Clerk Supreme Court.

Filed Sept. 14th, 1876, at 12 M. Recorded Sept. 19, 1876. (In Book "I", pages 32-3 Mining Records said County.)

STATE OF UTAH, *County of Salt Lake, ss:*

Utah Savings & Trust Co., a corporation, Licensed Abstractor of Titles in and for said County, does hereby certify that the foregoing instrument attached hereto is a full, true and correct copy of the Marshal's deed as recorded in Book "I", pages 32-33 of the Mining Records of Salt Lake County, State of Utah.

In Witness Whereof, said Company has caused this certificate to be signed by its Manager and its Corporate Seal to be hereunto affixed at Salt Lake City, Utah, this twenty-fourth day of October, A. D. 1902.

[SEAL.] UTAH SAVINGS & TRUST CO.
S. H. LYNCH, *Manager.*

Filed in U. S. Circuit Court, District of Utah. Oct. 27, 1902. Jerrold R. Letcher, Clerk.

C. R. SAVAGE, a witness produced by defendant on sur-rebuttal, and being first duly sworn, testified:

Direct examination.

By Mr. HILES:

Q. Your name is C. R. Savage?
A. Yes, sir.
Q. You are a photographer?
A. Yes, sir.
Q. Do you know where the premises known as the Kempton mine and the canyon in which that is situate?
A. Yes, sir. I never paid much attention as to the name of the mine; I just went up that canyon.
Q. When were you there?
A. Two or three weeks ago; I cannot say definitely without reference to some papers.
Q. I show you what appear to be photographs of sections of the country; I will ask you whether those are photographs taken by you?
A. Yes, sir.
497 Q. And are they correctly made?
A. Yes, sir; as correctly as a camera will make them.
Q. You have extended what the camera has taken on the photographs?

A. Yes; I have sought to reproduce the section exactly as it was there, yes.

Q. You have reproduced the photographs as taken by the camera?

A. Yes, sir.

Q. I show you four smaller photographs and ask you if you took those?

A. My son took those; my son went up on the hill; he was with me.

Q. He was with you?

A. Yes; I was along with him when those were taken.

Q. Well, can you say that these are correct representations of the hill?

A. Yes; I know the spot, I know the place all right.

Q. They are correct representations of what the camera has produced?

A. Yes, sir.

(No cross-examination.)

Mr. HILES: I will offer these photographs in evidence.

Mr. DICKSON: I object to the photographs offered because no rebuttal on the part of the case; they are in rebuttal of nothing that our witnesses testified to.

The COURT: They will be admitted.

Said photographs the two larger ones, were marked Deft. Photo 1, J. W. C. and Deft. Photo 2, J. W. C. and the smaller ones, Deft. Photo 3, J. W. C., Deft. Photo 4, J. W. C., Deft. Photo 5, J. W. C., and Deft. Photo 6, J. W. C.

HENRY ELLIS, a witness produced by defendant on surrebuttal, and being first duly sworn, testified:

Direct examination.

By Mr. HILES:

Q. Have you your assay certificate?

A. Well, I have a duplicate of the certificate here and Col. Wall has the other I believe.

Q. You furnished Col. Wall with a duplicate copy of the assays set out in this certificate?

A. Yes, sir—well of the numbers and of the valuations of the respective samples.

Q. I will ask you if that is the paper which you furnished him?

A. Yes, sir.

Q. That is a correct statement?

A. Yes, sir.

498 Q. And the various samples were given to you by whom?

A. By Mr. Beveridge.

Q. By Mr. James E. Beveridge?

A. Yes, sir.

FRANK C. MOREHOUSE, a witness recalled by defendants in surrebuttal, and having been already sworn herein, testified:

Direct examination.

By Mr. HILES:

Q. Mr. Morehouse, I will ask you if in your examinations you made any examination of the ground outside of the Ashland and the Kempton about which you testified the other day?

A. I did.

Q. Of parts of the country which were near to the Kempton mine?

A. Yes, sir.

Q. East of it?

A. East of it, south of it and north of it.

Q. Now coming first to the Neptune tunnel, and that part of it which is outside of the Kempton ground, what if any examination did you make in that as to determining the character of the rock, and what if any assays did you take from the mouth of the tunnel in to where the tunnel intersects the underground workings of the Kempton mine. State in your own way what you did in the way of examination, what samples you took and what you found?

A. I examined the tunnel from the mouth in. From the mouth of the tunnel for a short distance it was timbered, a distance probably of 25 feet. I measured from a point at the blacksmith shop in to quartzite a distance I think of 198 feet. The tunnel up to that point is in quartzite. At 185 feet in——

Q. To interrupt you, I will ask you whether it has been timbered in all the way?

A. No, sir; only the timbers that I mentioned until you get in to where I have sampled it. At a point 185 or 186 feet in there is a fissure containing ore in the quartzite and I took or assisted Mr. Beveridge—we went together—in taking a sample of that fissure.

Q. What is that sample?

A. The sample is marked No. 1.

Q. On the assayers return?

A. On the assay returns from Mr. Ellis.

By the COURT:

Q. Is that fissure indicated on that map?

A. I think not.

Q. 190 feet in did you say?

A. 185 or 186 feet in to the fissure I think from the blacksmith shop.

Q. Did you take samples from that?

499 A. I did take samples from that in the quartzite. I have notes of the samples and the distances, which I had better refer to probably, because I might make a mistake of a few feet. Sample No. 1 was from the fissure, the fissure I stated at 185 or 186 feet.

Q. What station is that on the map?

A. There is no station marked. If I had a rule I could tell where it would be. However this tunnel mouth would be the point, same point that we began to measure from.

Q. Go on?

A. It was 24 inches across that. 68 feet beyond that we took another sample. From fissure No. 1 we went about 16 feet in the quartzite or more than that—let me see—that quartzite was 198—about 13 feet in the quartzite to the contact. There was nothing in the contact.

Q. You did not find any fissure there?

A. No.

Q. Was there any excavation there?

A. No, sir; there is a slip between the quartzite and the limestone which is well defined. That is caved out for a distance irregular to the center of the tunnel from the edge of the tunnel, each edge probably of six or seven feet.

Q. Caved in?

A. Caved out.

Q. The lime has?

A. Yes; the debris that fell has been taken out which leaves an irregular caved excavation upon the contact. No. 2 was 68 feet from No. 1, in the fissure across one foot in the limestone. No. 3, proceeding on through limestone was 59 feet beyond No. 2, across one foot, a fissure in the limestone. No. 4 was 150 feet from No. 3 across 1 foot, in a fissure in the limestone.

Q. Now I will ask you if the intervening rocks between those fissures are the same as the fissure so far as the material is concerned?

A. No, sir, they are not. The intervening rock is limestone. There were one or two fissures an inch wide or an inch and a half with a little sulphides and talc or clay. They were clay seams, fissure shape, one or two, we did not sample. Aside from those the remaining rock was barren limestone which we sampled.

Q. You sampled in between the seams?

A. Yes.

Q. Go on?

A. No; 5 is from the contact in the Neptune tunnel already described for 50 feet, along the west side of the tunnel in limestone and excludes fissures No. 2 or assay No. 2 of one foot. No. 6 is from the end of No. 5 for 50 feet along the same side of the tunnel—limestone, excluding fissure No. 3 of one foot. No. 7 is for 50
500 feet from the end of No. 6 in the limestone. No. 8 is from the end of No. 7 for 50 feet in limestone. No. 9 is from the end of No. 8 in the limestone; No. 10 is for 50 feet from the end of No. 9 excluding eight feet where the Sampson fissure is encountered and going on eight or ten feet beyond the Sampson fissure No. 11 is from the contact southerly toward the mouth of the tunnel, in the quartzite and excludes fissure No. 1 of 2 feet. We went up to another part of the mine now for No. 12 sample. No. 12 was taken from the side of the branch of what is marked here on plaintiff's Exhibit 8 as the Delia B of the Mill tunnel, from the right branch of the Mill tunnel and running westerly from station 269 near the top of what

is called the Jordan incline near station 279 it was across a few feet, just taken as a sample of a few feet of quartzite at the head of nearly the head of the Jordan incline.

Q. What is that?

A. No. 12.

Q. Did you get specimens of the rock from that place?

A. No, sir.

Q. You took samples?

A. We took that sample, yes, sir.

Q. And that was assayed?

A. That was assayed. No. 13, I do not see it here; I took it—I have some note at a different point. I thought I had them all together so as not to delay. I have not written up this.

Q. What are you hunting for now?

A. No. 13; I have it somewhere here but if you don't want to delay——

Q. I will ask you to look at this—may be that will assist you?

A. I have either made a mistake or there is a mistake in the numbering. No. 12 as I have it here, I have already described. I have seemingly omitted No. 13.

Q. Pass on to No. 14.

A. No. 14 is from the beginning, at the south end of the Rip Van Winkle cross cut from the No. 1 West drift six feet beyond station 967 (637) and continuing to the end beyond that point for 50 feet in limestone. No. 15 is from the end of No. 14 in the same cross cut continuing northerly for 50 feet. No. 16 is from the end of No. 15 for 50 feet in the same cross cut.

Q. In lime?

A. All in lime. No. 17 is the next 50 feet beginning at the beginning of 16 and continuing to station 782 in the West drift, the cross cut is all in lime and from one end to the other the bedding planes show very clearly all the way. No. 18 was taken in the West drift on the south side beginning at Station 782 continuing through limestone eastward for 50 feet. No. 19 was from the end of No. 18 for 50 feet along the same tunnel in limestone. No. 20
501 was from the end of No. 19 for 50 feet in limestone continuing on eastward for 55 feet to an ore body, the edge of an ore body standing vertically nearly.

Q. What was the strike of this ore body?

A. Northerly and southerly. No. 21 was from beginning at station 782 in the No. 1 West drift for 50 feet westward in limestone. No. 22 was from the end of No. 21 for 50 feet.

Q. Westerly?

A. Continuing westerly in limestone No. 23 was from the end of No. 22 continuing westwardly in limestone No. 24 was from the end of 22 for 50 feet in limestone, continuing on westerly. No. 25 was from the end of 23 for 50 feet continuing westerly in limestone. No. 26 was from beginning near station 637 in No. 1 West drift continuing westward for 50 feet in limestone. No. 27 was from the end of No. 26 for 50 feet westward in limestone. No. 28 from the end of No. 27 50 feet continuing westward in limestone. No. 29 from

the end of No. 28 for 50 feet continuing on westward in limestone. No. 30 was from the end of No. 29 for 50 feet continuing westward in limestone No. 31 was from the end of No. 30 continuing in limestone up to a point marked underground 717-a being about 50 feet, 40 or 50 feet westerly of station marked 717. No. 33 was from the face of the Coolidge cross cut.

Q. What was that in?

A. Quartzite. At that date—that was on October 19th, there was some work going on there; I don't know whether it has been extended any further since. No. 34 was from the face on the surface map, the Old Jordan surface map, Exhibit T; it is shown very clearly on one of our photographs. It was across the westerly or northwesterly face of Cut A for the distance of about 150 or 175 feet.

Q. I will ask you to look at these photographs, the one marked Photo 5; and see if that is the place?

A. That is the place.

Q. Where you took the one from that face?

A. I took it from a point near the edge of the photograph across that face to a point near the westerly edge of the picture through limestone, the strata standing as shown in the photograph all the way through very plain and distinct and unbroken.

Q. Now I will ask you if these 34 assays were fairly taken along the line of the course stated?

A. They were not a straight cutting, a trench cut all the way across, but they were pieces broken out every foot or some places may be a little further than that broken along, but I broke the limestone all the way along. We took a piece probably at every foot of these distances named.

502 Q. When you speak of limestone you mean What kind of limestone do you mean with reference to the hardness and stratification?

A. Generally speaking the limestone was hard with well defined bedding planes generally, with some cross cracks in it, but generally very hard limestone especially in the Neptune tunnel.

Q. Have you samples of the limestone?

A. I have not in the Court room; I had them the other day.

Q. You took them and can produce them if called for?

A. Yes, sir. I broke the samples—but I can probably explain those when I show them.

Q. Now with reference to sample 15 and 16 in the Rip Van Winkle cross cut, I will ask you whether that cross cut extends across the strata?

A. It cuts right across the strata, it cuts the bedding planes. They show in the side of the tunnel dipping down and disappearing in the bottom all the way from one end to the other.

Q. Now Mr. Morehouse, did you go into the drift which leads from the plaintiffs No. 1 tunnel, the West drift so called from which is extended what is called the Holden raise?

A. Yes, sir.

Q. I wish you would describe that tunnel from its appearance

from the time it leaves the West drift until it gets to where the Holden upraise commences?

A. The tunnel after it gets into the cross cut, after it gets in a short distance, cuts a fissure showing ore, this branch, the left hand branch of it starting off 40 or 50 feet easterly from the foot of the Holden raise, is driven on the fissure.

Q. Easterly or southerly?

A. Driven southerly. There is ore showing in the cross cut however, nearly to a point at the foot of the Holden raise. The West drift tunnel shows no ore.

Q. Did you go up the Holden raise?

A. I did not.

Q. You went to the foot of it?

A. I went to the foot of it.

Q. I will ask you how that strikes with reference to what is called the Sampson fissure?

A. The cross cut generally until, generally from the branch through the left branch and cross cut out from the left branch to the West drift is in the general course of the Sampson fissure.

Q. As a miner can you say whether it is on the Sampson fissure?

A. It is my opinion that it is.

Q. You don't know whether it connects with the workings through the Holden raise into Kempton ground?

A. I do not; it likely would.

503 Q. Suppose it continued in that direction; would it connect into the Kempton workings on the Sampson fissure?

A. I think so, yes; it surely would.

Q. It surely would?

A. Yes, sir.

Q. Now how many feet is it approximately from this Holden cross cut on that drift until you can find any ore?

A. It is from station 600 and near station 637 to station 717—40 or 50 feet from station 717.

Q. How far would that be?

A. Three hundred or three hundred and fifty feet.

Q. What kind of a fissure do you find there or opening in the rocks?

A. It would be about three hundred feet. I find a fissure running north and south on which cross cuts or drifts are driven from station 717-*a* underground; I do not see it here. I went out in the cross cut only 50 or 60 feet to the south. The fissure is well defined. Beyond that going westward there is some ore and some lime and ore appearing in the form of a fissure to station 781 where a cross cut or drift is driven northwesterly and at near station 793 in that drift about 12 feet from station 793 southeasterly, an ore body is encountered and the rest of the drift from there out for a distance of 30 or 40 or possibly 50 feet is in ore standing vertically and pitching slightly to the west and some porphyry—after you get out from station 793 20 feet then some porphyry comes in and the ore is somewhat mixed with porphyry to the end. The excavation goes on but it is caved down so that you cannot see it.

Q. I will ask you where this point where you first encounter ore after leaving the Holden drift westward where that point is with reference to the Ashland fissure, the strike of the Ashland fissure?

A. Well, it would not be—it would be to the east of the Ashland fissure on its dip as shown by its dip on the surface.

Q. With reference to the apex on the surface about where would it be?

A. It would be very near in line with the apex.

Q. Very near the line of the apex on the surface?

A. The first fissure encountered after leaving the Holden raise locality.

Q. That is is in the neighborhood of the Ashland fissure?

A. It is all fissure from there over to the big ore body which is at station 793, but there is considerable limestone through that distance until you get through to the big ore body.

Q. Now returning to the Neptune tunnel, I will ask you if that is an old tunnel?

A. It appears to be, yes; from its appearance I should judge it was.

Q. And has been there for many years?

A. Yes, sir.

504 Q. Now going east of the Neptune tunnel, I will ask you if you examined on the surface and underground the country indicated by Cut A, Cut B, Cut C and Cut D on the map of the plaintiffs Exhibit T?

A. I did.

Q. What did you find there on the surface and underground?

A. I found at Cut A a fissure that had caved down until the excavation was as large I guess as this map shows; a portion of it, the north portion in limestone and the southerly or southwesterly portion in quartzite.

Q. I will ask you if you know a fissure which is called the Galena fissure?

A. It is called the Galena fissure.

Q. Proceed?

A. That would probably mean the same thing as to Cut B to which it is joined. It is an irregular old caving or else a surface excavation has been made there, but it looks to have caved down. A part of Cut B is in limestone and a portion is in quartzite.

Q. Which portion of the cut is in quartzite?

A. The northerly portion.

Q. Just mark with your pointer how much of Cut B would be in quartzite?

A. Well it would be pretty hard for me to draw the line as I saw no surface stakes. I judge by the position of No. 1 West drift it would be this extreme end here probably.

Q. Would be in the quartzite?

A. Yes. Cut C, a good portion of that end, the quartzite appears on the upper side of that cut. Cut C is pretty hard to tell about. It is caved down and filled with debris, so that the sides of it are not shown and it is covered with soil. Cut D is in the quartzite.

Q. All of it?

A. Yes, sir. I would not say as to this extreme portion but the portion that I examined in this tunnel all through here is in quartzite.

Q. That is further east?

A. That is further east I know but on our map I would identify that, I would identify that as a cut on our map. It is marked here in pencil cut G, I take it. It is in quartzite, cut not marked but the old tunnel runs into it.

Q. Well I will come to that after a while. That is east of the Ashland fissure, is it not?

A. Yes, sir.

Q. Of the Galena fissure?

A. Of the Galena fissure, yes.

Q. I will ask you whether you have observed the Galena fissure underground?

A. I have.

Q. With reference to its strike and dip both in the quartzite and in the lime?

A. I have.

Q. What did you see?

505 A. I am more familiar with our map and the stations in that than in this.

Q. You say "our map;" you mean the map of the defendants?

A. I mean the map of the defendants, yes, sir. Beginning at near a point marked elevation 1035 on this Exhibit 21, the mouth of the tunnel. The tunnel begins and continues in quartzite to station 2; from station 2 the tunnel is in quartzite for about 30 feet going northerly in the fissure.

Q. Any ore remaining on the walls that you saw?

A. Yes; there is ore, oxidized ore standing on the sides and at station or near station 2, the point marked raise, there is a raise goes up on the fissure in quartzite. You can see up for 20 or 30 feet, I should judge, going to the south.

Q. How does the ore show with reference to the stratification if it shows any stratification?

A. The ore remaining on the sides of the walls of the fissure. I picked through it in places it has quite a lot of oxidized matter left on the walls into the rock and it lies on it in the form of a sheet or slab. In places I could not pick through it, but generally throughout it was just what would be called, what I would call the casing left on the side of the fissure. The fissure continued on into the lime at station 4 and a drift was driven on the line indicated northerly on a well defined fissure, the walls being limestone where I picked through them as described and extending up 20 feet in places, the fissure being two or three feet in width, the top of the fissure generally showing ore in place in the top with the fissure. From stations 4 to 6, or a little beyond 6 it is in limestone. From stations 6 and 7 and around southerly to station 8, it is through ore and somewhat mixed; the fissure identity is not so plain, but back at station, coming back across from stations 9 to 11, there is a fissure and considerable

work has been done, considerable. There is a winze going down and some irregular stoping going up on what appears to be the dip of the fissure, or going up nearly vertical. That is in limestone. From station 2 going more westerly, after you get out about 20 or 30 feet, then there are some pretty large stopes; I did not go into them; they were filled up. I just looked to see that there had been considerable stoping there. That was the extent of my underground examination of that at that point. I examined that fissure further in what is marked as U. S. tunnel No. 1.

Q. What did you see there?

A. United States tunnel No. 1 begins in limestone and is in limestone for about 140 feet I should judge where it encounters a fissure.

506 Q. What is the fissure in?

A. The Galena fissure; it connects the Galena fissure. The fissure is oxidized ore with alternating colors where it is shown. The alternating colors are brown, lighter colored streaks showing, extending nearly vertical. Going into the tunnel you come right from solid limestone right into it; it extends up and down in the tunnel on the south side of the tunnel about this point some 140 feet in or such a matter. The tunnel is timbered largely after you get in 140 or 150 feet and it is only in places that you can see the walls or see behind the timbers. The place I took the samples is a place where the lagging is not in and is as I have described from there on going in for 50 or 60 feet I should say you can only rarely get a sight of—you can only rarely see it beyond the timbers where you do see ore. After you get in about 285 feet, you can see through the timbers again you see what appears to be quartzite walls, I would not say that they are in place; they may be; I think they are of quartzite. That would be about 285 feet from the mouth, and near a station marked 291 on that tunnel at 15 feet beyond the station marked 211, which is in about 285 or 290 feet, 15 feet beyond that the timbering ceased and the tunnel is in quartzite. From where the timbering ceased for about 20 feet the tunnel is in quartzite. At about 20 feet from where the timbering ceased about, the tunnel goes in and there is lime on the south side and quartzite upon the north side about there, just this side of a point marked winze, just easterly of the point marked winze, the first winze in the No. 1 tunnel. At the point mentioned there is a fissure extending about 45 to 50 degrees from a horizontal pitching to the south with limestone on the left hand and quartzite on the right hand of this winze marked winze which is in about 325 feet.

Q. From the end of the tunnel?

A. Yes; from the mouth of the tunnel and is sunk in that contact in that fissure pitching to the south and in ore. There is evidence of a north and south cross fissure over the top of the winze. From the winze to near station 508 the tunnel is practically on the fissure, the quartzite being on the right hand and lime on the left as you go westward. At station or near station 508, ten feet beyond, and upraise goes up to the north at a dip at a right angle to the bed, 40° from a horizontal; it goes up 85 feet on a 40° pitch about, mainly

in ore, where the excavation extends downward through the ore the bottom being filled somewhat, the bottom of the upraise—the quartzite appears. At the top of the upraise there is a drift driven to the north, the end of which is caved down and an excavation made by the cave showing the country rock for a distance of probably ten feet above the bottom of the drift, the drift and the top of the caved portion where the rock is in place is in quartzite. The West
507 drift from near station 508 turns and the fissure disappears in the right hand side and is cut by a cross cut near station 755 and also near 638 and a cross cut driven on from station 755 called the Coolidge cross cut. At about 50 feet from 755 northerly in that cross cut the fissure is cut again. The face of the cross cut, the cross cut is driven past the fissure northerly and the face is in quartzite. Where the fissure is cut in that cross cut, the limestone disappears going into like the side of the cross cut, the limestone disappears, the bedding pitching northerly and disappear and ore comes in pitching southerly behind which, at the bottom of which is quartzite pitching southerly.

(By Mr. DICKSON:)

Q. You mean the bottom of the lime?

A. Underlying the ore.

Q. You say the lime beds at this point pitch to the left?

A. Dip to the north.

Q. And over the quartzite pitching to the south?

A. South of it. The West drift then continues in limestone as I have described for from ten or twelve feet beyond or east of station 508 and at a point near between station 507 and 508 there is an ore body encountered standing vertically. The foot of the raise is shown as I have described as being near station 508, the ore body on a level on the south side of the drift when you enter it it is standing up and down nearly vertical and between 507 and 508 a drift has been driven out on the fissure running north and south.

Q. Driven south?

A. At a point about 50 feet—40 feet westerly beyond station 508 the ore disappears and the limestone come in here standing vertically as I have described already in describing the samples; continuing on the west drift is in limestone from a point 540 feet.

Q. That you have already spoken about?

A. Yes, sir.

Q. Well, now what do you know about the country to the east of that with reference to this structure as containing lime or quartzite or porphyry, extending towards the end of the Old Jordan claim?

A. I did not examine very largely into the works of the Mill tunnel; I went into it. From its mouth and at a point at that station 268, I went through to station 269 all in quartzite. From station 269 I went on to that portion past station 270 to 275, I guess to station 279. The portion from station 269 was largely timbered—in places you could see the walls and in places you could not. You could not see them much until you got there near station 279 at the top of an incline called the Jordan incline. I went down the Jordan

incline for a distance of probably 150 feet, or may be not so
508 far. It pitched to the north at an angle of about 30° I should say, and it was largely timbered; it was nearly all timbered and lagged, but at two points I got up through the timbers and looked up through the sides; it was caved above but had been excavated above and you could get through the lagging in places, where there was four foot space; at the point I looked through the one at the furthest point I went down, and in there a little above it it shows a fissure dipping nearly vertical and running north and south; and I looked at the walls and the walls of the fissure were quartzite.

Q. It is in that fissure as delineated upon this map in which exists the Jones stope?

A. Marked Jones stope.

Q. And Pipe stope?

A. Piper stope and another Jones stope. From station—the station I do not observe, but I have it from the first in the tunnel and turning off into the branch there 268, at the first cross cut or drift to the south which is driven in on the fissures which runs north and south, and crossing over the winze for 60 feet or may be more or may be less, I would not say or attempt to, but down in that at the end of the cross cut or this drift a level is running west in ore, mineral. The faces of the level, both faces, both the east face and the west face, showed quartzite. I went on through into the tunnel further but I would not attempt to say how far—I made no measurements; I did not have very much time in there, but the portion I went into as far as I went, was in quartzite.

(By Mr. Dickson:)

Q. What tunnel is that?

A. The Mill tunnel, marked Mill tunnel. The surface of the ground, over on the surface above this and on up—I examined up to the mouth of what is called the Commercial tunnel, the mouth of which is shown near elevation point 1117.6. The mouth of the tunnel begins in porphyry and it is a few feet only to where the tunnel shows limestone. I examined the tunnel from its mouth in to a station not marked, but on a straight course for 250 feet about, the end of it being caved down, the end being in ore and in a fissure, a north and south fissure standing nearly vertical. At the first drift running westerly, and through that drift I went through limestone to where the drift turns to the north again and showed a fissure. From the point of its next turn westerly I went for about 100 feet in limestone to a fissure containing ore running north and south and standing nearly vertical and from where that fissure was encountered, I went on for a distance of about 240 feet through ore and limestone, largely limestone but an ore vein showing to a point on the westerly end of the workings on this map, where a fissure marked cross fissure here was encountered, and containing ore and had been stoped
509 downward standing nearly vertical and running northerly and southerly. It had been stoped down as far as I could see I examined it for more than 150 feet, I will say, with stopes going down in the fissure and stopes going up and stopes going out to the south and to the north as far as I went.

Q. Did you observe in that fissure anything of the stratification of the ore bodies?

A. The ore was standing, the ore that remained and the ore on the sides of the workings that was left, conformed to the dip of the fissure and laid in place and was laminated with the fissure. The major portion of the ore had been extracted. The surface of the ground from the mouth of the Commercial tunnel down to cut on Old Jordan surface map, down to and below, easterly of the workings on the Old Jordan surface map Exhibit T, I examined on a line running southwesterly—let me see—this is east—southeasterly is correct, running southeasterly. The surface is shown. There are a number of workings. Our surface map would be better to show it, I take it. I do not recognize, I cannot point to the openings on this map so that I could positively identify them.

Q. When you say "our surface map" you mean the defendants' exhibit 20?

A. Surface map of the defendants Exhibit 20. Near station 928 which represents near the mouth of the Commercial tunnel, from that point southeasterly I examined the surface to some extent from this point marked Road.

Q. On the wagon road?

A. This part marked wagon road, about 200 feet easterly from the mouth of the tunnel, the Commercial tunnel, the wagon road shows the rock upon the upper side and shows the porphyry dike, a large porphyry dike crossing it; beyond it, down in this bend of the road or a little east of it shows quartzite. About half way between the extreme east curve of this road to a point marked P 1, L 419, the quartzite shows in the road. At a point about 70 feet north easterly, or say north, from post 1, L 419 the porphyry shows in place and 40 to 45 feet southerly from P 1 L 419 quartzite in place. The wagon road shows quartzite along the side on the upper side of the road oppoite post 925, or station 925, for some distance, it shows quartzite in place. What is marked Cut above the road show quartzite a small excavation northerly from station 922 is all in quartzite. The point marked excavation southerly from 921 is in quartzite and ore has been stoped showing a fissure running northerly and southerly in the quartzite, the walls being quartzite. There are a number of openings along not shown on this map along that fissure. Beyond as shown on Photograph No. 1, there are large excavations back of the houses, back of what is called the office building and
510 along there, I would not attempt to say just which houses, but these houses furtherest back on this photograph showing quartzite. Quartzite shows along below the dump from the No. 1 tunnel; quartzite is shown across where the rocks are seen very near back of the bunk house or rooming house on the surface where the rocks are shown clear over and beyond excavation between 923 and 922 on the surface map. There are a number of openings on the surface.

Q. I will ask you if you know where the Jordan discovery is?

A. Yes; I know what was shown to me or told to me as being the point of the Jordan discovery and shaft.

Objected to.

Q. Well, did you see a shaft?
A. I saw a shaft.
Q. At the east end of the Jordan?
A. Down on the easterly portion of the Jordan.
Q. What was it in?
A. Quartzite it began in and conglomerate; there was some conglomerate rock at the collar and as far down as I could reach; I reached down as far as I could; I laid down and reached down and took several pieces out and examined them. It was quartzite that the shaft was in as far as I could see. That is under the dump on Photograph 1; you have to crawl down and raise some boards to get down through the dump to the drift back of it and the shaft is there. There was no ladder there and it was not possible as I considered to get down to the bottom but as far as I could see it was quartzite, except around the collar it was conglomerate.
Q. Did you take a sampe from that?
A. I did not. There are a number of openings, surface openings upon and near the Mountain Gem and on the Excelsior probably, some of them I examined. They will be shown on this map near station 420.
Q. What did you find there in that?
A. Near station 416 here as the mouth of the Rip Van Winkle tunnel, which is driven in—it is shown here better on this underground map—the tunnel for a distance of about 125, 130 or 140 feet is in quartzite and at about that distance cuts the limestone quartzite contact and cuts a fissure, upon which fissure is an incline sunk dipping about 35 degrees to the north. I went down the incline 60 to 75 feet or a hundred feet possibly. The incline is driven down on ore. Some stoping has been done off to the left. After you get down about 50 or 60 feet, there is some stoping up in the fissure which is standing nearly vertical. The ore is still in place there, standing nearly vertical and showing the fissure structure. On the fissure at the head of the incline an excavation has been made and the fissure shows back in the quartzite.
Q. What is the name of that?
511 A. That is the Rip Van Winkle fissure. At the top of the Jackson incline there is a surface excavation showing oxidized iron extending in the fissure formed in the limestone, standing vertically, and in the center of this excavation were these lime, and kind of oxidized lime and ore. About the center of that excavation of the Rip Van Winkle fissure upon which the Jackson incline is driven. The Jackson incline dips pretty steep, 40° probably for a distance of 100 feet or more or less more maybe, where it flattens considerably, and continues flat at a dip of 25° probably for a distance of 100 feet or more, more or less—I would not attempt to say and did not measure it; then the incline goes vertically for 150 feet or 100 feet.
Q. What is the flat portion in?
A. The flat portion is in the fissure, and stopes have been driven back under the bottom of the incline, and from the top stopes go up and down in the fissure, the walls of the fissure showing lime on both

sides where I picked through this coating or casing of ore left on the sides, extending down with the sides. The latter portion the vertical portion, after you get down 60 or 70 or maybe 50 feet, is all timbered from there down so that neither the walls nor the rock can be seen. It is timbered and lagged down to its intersection or connection with the Rip Van Winkle cross cut, which runs out from the West drift, from No. 1 West drift of the United States tunnel No. 1. The stoping in these workings described has been wholly confined to the fissure at all points where the rock or formation can be seen. There may be—I don't know whether there is surface workings—I examined some other surface workings aside from those described as being above the Rip Van Winkle tunnel but they do not show on this map (plaintiff's exhibit T). They show up on the surface near elevation point 1137.3. There are two or three surface workings there, showing ore and some stoping has been done. The openings are all on the fissure, the fissure standing nearly vertical and the strike northerly and southerly.

Q. I will ask you one other question Mr. Morehouse. Do you know about where the Galena shaft is with reference to the mouth of the tunnel?

A. The mouth of the tunnel I have described?

Q. Of the Neptune tunnel?

A. Yes.

Q. A short distance below?

A. It is a short distance below to the southeast or southeasterly.

Q. But you do not know?

A. East or south anyhow.

Q. That is in the quartzite, the shaft?

A. Yes; that is to say the quartzite shows; I did not go down the shaft; I did not examine the shaft but the quartzite shows on
512 both sides that is the quartzite shows off to the north and south of it.

Q. North and south of it?

A. Yes, sir.

Q. So that it is sunk there in the quartzite, is it?

A. Yes.

Q. You don't know what connection the shaft has with the workings which you have described?

A. I don't know of my own knowledge whether the shaft connects with the workings I have described. There are dumps in the line of the fissures that I have described on to the southwesterly from the Galena shaft however; you can see them for a thousand feet along in line of it and in line of the Galena fissure as shown in the United States tunnel No. 1 and in the tunnel near elevation point 1035.

Q. All the dumps are in line?

A. Yes.

Q. With the strike of the fissure?

A. Yes, sir.

Q. Do you know where the Mountain Gem discovery is?

A. Yes; I have seen the post marked discovery of a lode corresponding to the Mountain Gem as I found at 475.

Q. What does the discovery consist of, what did you see there?
A. I saw a stake, an old stake 4 x 4 square stuck in the debris.
Q. Driven down into loose rock and material like talus?

Objected to as leading.

A. It is driven, I don't know what it is driven through; it is driven or stuck down into the debris, dirt, soil and rock, loose rock.
Q. What is there in the way of mining or excavation there?

Objected to by the plaintiff as not rebuttal and seems to be wholly irrelevant to anything that we have drawn out.

A. There is not and never was any. It is as I have described, running down into the debris and loose rock and no openings at that point.

Cross-examination of MOREHOUSE on surrebuttal.

By Mr. DICKSON:

Q. Can you indicate Mr. Morehouse, upon the map what you claim to be the strike of the quartzite and the limestone beds?
A. Yes, sir.
Q. Will you please indicate upon the map showing what the strike is?
A. There are surface openings upon the surface map that lead me to believe that the strike varies very materially as you go east.
Q. The general strike?
A. The general strike.
513 Q. Just indicate the general strike?
A. The general strike of the quartzite in the places I have examined it is a little north of east and a little south of west.
Q. Will you please put your ruler on it for a moment?
A. Yes, sir Mr. Dickson, I have made no calculation, but I think I may say that it is approximately a few degrees north of east and a few degrees south of east.
Q. True or magnetic?
A. Magnetic, or true, true.
Q. It is very nearly east and west?
A. Yes; it is nearly easterly; it is not northeasterly; it is not east and west; it is between the two.
Q. Can you not come nearer to it than that: You said for instance it is a few degrees north of east, now you say it is not northeasterly, which would be 45 degrees north of east.
A. I never undertook to ascertain it exactly, and I simply have noticed it as I have found it in different places, and in taking the general points that I know, the direction is between as I look at it most anywhere without a compass I concluded it was between northeast and North, but I would not say as to the degrees.
Q. It is more than ten degrees north of east in your judgment?

The COURT: Unless you desire this to become a matter of record, it is not necessary to go into it as far as I am concerned; I don't know how much importance you attach to it, but I attach nothing to it.

Mr. DICKSON: It will have a bearing further on in the testimony.
The COURT: Very well; go ahead; you can answer if you know.
(No answer made by witness.)

Q. Do you know the difference between colloidal quartz and quartzite?
A. I know the difference, that is to say I——
Q. You have seen colloidal quartz?
A. I have seen quartz; I don't know colloidal quartz.
Q. You don't know what colloidal quartz is?
A. No; sir; I do not; I know quartzite.
Q. I hand you a piece of rock marked 5 and ask you what you call that?
A. It is an altered rock.
Q. Is it quartzite?
A. It is not a true quartzite, no, sir; it has been altered; it has been changed. It might have been quartzite, but it has been altered.
Q. It is not simply limestone impregnated with silica?
A. It is silicious.
514 Q. Limestone replaced with silica, a limestone structure showing in it?
A. There is a structure here showing somewhat; structure of limestone; and there is limestone in it. There is limestone in the joints of these fractures, but it may have—it is not a true rock; it is may—what we would call a cherty silicious limestone.
Q. Would you say it was limestone or quartzite or an amorphism of quartzite, or can't you say?
A. I could not say and would not attempt to say. It is not a true rock; it is an altered rock, very much altered.
Q. If you found that kind of rock in any underground working here which you have examined, you would be able to say whether it was quartzite or limestone replaced by silica, wouldn't you?
A. If it was found in the quartzite, if I found it in the quartzite, I would conclude it was a changed quartzite. If I found it in the lime I would think it might be a changed lime; it is a changed rock.
Q. You found one place in quartzite near the head of the Jordan incline, about two feet of it; could you say that it was quartzite or lime replaced by silica?
A. I would say it was quartzite.
Q. And there were only two feet of it?
A. I did not say two feet I said a few feet, that the sample represented a few feet; it was by no means all that there was there, I would not say.
Q. When you went up from the Jordan line—you know what I mean, by the Jordan line?
A. Yes; I know what you mean.
Q. You have quartzite until you get to what you call the Commercial lime at the mouth of the Commercial tunnel?
A. After you leave the Jordan line.
Q. Between those two bodies of lime?
A. What point do you mean?

Q. From where you leave the Jordan line and go northwards to the Commercial, you are in quartzite, are you not?

A. In every place the rock is exposed, yes, sir; on this map.

Q. The workings connect with what is marked here Commercial tunnel after you pass out of the quartzite into the Commercial lime and are all in what are called the Commercial lime belt and quartzite?

A. Do you mean the underground workings or surface.

Q. The underground workings?

A. That is all in limestone.

Q. In Commercial limestone?

A. All limestone.

Q. What you call Commercial lime?

515 A. I do not call it Commercial lime; it is limestone; it is the limestone I believe that is called the Commercial limestone.

Q. That is all right?

A. You asked me what I called it. It is hearsay with me.

Q. The mouth of that commercial tunnel is in quartzite?

A. The mouth of the tunnel is in porphyry and there is quartzite showing just below or immediately east of it.

Q. And as you go down to this place marked wagon road, you have quartzite showing at the head down to near R. S. L. 49 P 1 L 419 P 1 L 419; you have quartzite in the road or alongside the road or nearly right opposite to it?

A. Yes; up in there in that turn in there.

Q. As you go southerly you have quartzite on the road where——

A. At near station 925 and along both ways from station 923 for some little distance.

Q. Now please mark the excavation on this Exhibit 20 that is all in quartzite?

A. That is all quartzite, some of it mineralized and metamorphosed and changed but what I call quartzite.

Q. Then at the point marked Excavation near station 924 is quartzite?

A. Yes, sir.

Q. Now come to Photograph one and indicate on the map where this quartzite is that you speak of just about the old building indicated here on the map?

A. Yes, sir; I think I can.

Q. Here?

A. No, sir; it would be back in here, down here.

Q. About down there?

A. Yes.

Q. How far about north of the southerly side line of the Jordan would you say you found that quartzite which you refer to in the photograph?

A. I could not say exactly as to that I think this quartzite in some of the excavations extends clear across the side line of the Jordan.

Q. A little across the side line?

A. I know the quartzite shows in many excavations there.

Q. And near the south line of the Jordan?
A. Oh, yes, on the Jordan, I will say on the Jordan.
Q. On the Jordan and south of it?
A. Yes.
Q. This U. S. tunnel on your Exhibit 20 starts in what?
A. Limestone.
Q. Starts in limestone?
A. Yes, sir.
Q. How far southerly from that on the south line of the Jordan is in quartzite; right opposite that, isn't it?
A. Yes.
Q. And the space between there is not over 65 to 70 inches about?
A. I think somewhere like that, yes, something like that.
516 Q. What do you say the width of this bounding quartzite is, the bounding limestone called the Jordan limestone?
A. Well, I never measured it, but of course it would be over 250 feet in width vertically or at right angles to the dip—250 feet about, or more than that—at any rate that.
Q. In this place according to your testimony it could not be more than 60 feet across it if you have quartzite in the places you have spoken of?
A. If that is the case it could not be.
Q. You have quartzite cutting right across the lime belt?
A. I would have quartzite through the country I have described, and through what is termed the lime belt.
Q. That porphyry that you have there must cut that bed of quartzite you spoke of on the surface and must cut through the limestone belt diagonally, must it not?
A. It would not be diagonal, no.
Q. At right angles to it.
A. I will show you the line of quartzite; the line of quartzite shows around here.
Q. As you place the ruler?
A. Yes, sir.
Q. Pretty near?
A. Pretty near around that way. It is irregular. That is to say, that is the surface showing.
Q. I understand. Now way on to the east of the east end line of the Jordan lot 64, you found the lime belt going on in its normal course, did you not?
A. I did not.
Q. Did you go up there to look?
A. At the east end of the Jordan I never made any examination as far as I really did not make any examinations further than the discovery shaft of the east end of the Jordan, that is to say to go over the surface.
Q. You looked at it?
A. I saw it, yes.
Q. Limestone apparently going right off to the east?
A. I saw some small stratas of lime along down the canyon, on the wagon road.

Q. Going right along east?
A. Well, yes, easterly, yes.
Q. I did not mean true east?
A. Yes, sir.
Q. You have seen in ore bodies, especially in the lime have you not, Mr. Morehouse, alternating seams, or alternating seams of quartz and ore?
A. Yes, sir.
Q. Sometimes the alternating seams would be very narrow and sometimes would be large?
A. Yes, sir. I have seen quartz through the ore bodies as you have described; I have seen streaks of quartz and streaks of ore through them.
Q. How much time did you spend in going through all of these underground workings that you have explained in your direct examination?
517 A. You mean in all the workings I have testified to?
Q. Underground?
A. I have spent—I did not keep track, I did not keep the time I spent underground; I was altogether on the ground 18 or 20 days.
Q. I am talking about underground?
A. I spent probably more than half of that time underground considerably.
Q. The Mill tunnel; did you go through that from its mouth?
A. Yes; from its mouth, I say, I went into it in the building, it is what I understood to be the mill tunnel.
Q. And did you say you were in quartzite?
A. Yes, sir.
Q. To what point?
A. Where the rocks could be seen, all the way.
Q. There were some old timbers there?
A. Yes; old timbers.
Q. Did you ask to have them removed? so that you could see it?
A. No, sir.
Q. How far did you go in in the quartzite before you come to the lime?
A. That is all I saw—I did not get out of the quartzite.
Q. You did not get out of the quartzite at all?
A. I did not go very far in the tunnel; I did not go straight in it; I went in the left hand branch.
Q. Was that in quartzite?
A. Yes, sir.
Q. What distance?
A. I would not say how far I went, but beyond this point, beyond 269.
Q. Did you go beyond that?
A. I went some distance beyond that, yes.
Q. In quartzite as far as you went?
A. Yes, sir.
Q. Did you go into what is marked the Footwall drift here?
A. I went through a cross cut, the first left hand cross cut I don't

know what it would be marked there; there was no station; it was the first left hand cross cut in this Mill tunnel; through this left hand branch.

Q. Can you indicate where that is on the map?

A. I think it is between stations 268 and 269.

Q. You went into the stopes there, didn't you?

A. Yes, sir.

Q. They are in lime, are they not?

A. No, sir; the examinations I made of the cross cut it goes south in ore and in the fissure and there is a drift at the end of it each way.

Q. In lime?

A. The ends of the drift are in quartzite.

Q. You are quite sure of that are you?

A. I call it quartzite.

518 Q. Do you call the north and south side of the stope there quartzite or lime?

A. I do not call it the north side at all; I called it the east and west end.

Q. Did you examine to see whether the old stoping there on the north side of the stopes shown along the foot wall of this was lime or quartzite?

A. I did not examine the old stopes.

Q. So that may be in lime for aught you know. Then you have quartzite upon the same level going in from station 268 to 269 and beyond?

A. Well, it can be seen it is quartzite.

Q. Where did you find the head of the Jordan raise?

A. At station 279.

Q. And there you are in quartzite still?

A. Where the rock could be seen is quartzite, yes.

Q. At the place you speak of a few feet of quartzite?

A. Yes; there is a few feet of it; we took some out for a few feet there.

Q. Did you bring it here?

A. I had the sample assayed.

Q. But you did not bring a sample?

A. No; except that.

Q. And going down the Jordan incline were you in lime?

A. I did not see any lime; it was most all ore; it was in the fissure.

Q. The Delia B tunnel starts in what?

A. Limestone.

Q. So you have limestone here at this point and you don't know whether you have limestone or quartzite there?

A. I know I have quartzite in the face of the foot wall drift.

Q. Ore?

A. No, sir; I did not.

Q. You have quartzite immediately above on the red level, north of it?

A. That is on the same level practically.

Q. And then 160 feet, or say down as far as you went down the Jordan incline, you had quartzite?

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A. I saw quartzite, yes.
Q. Did you go out this west drift westerly?
A. No; there was a winze there, my recollection is; we could not get across it.
Q. Don't you know that the Jordan incline goes down from top to bottom through an immense stope every foot of the way worked out years ago? and old timbers standing all around that incline, as you go down, showing that it has been stoped and shipped?
A. The incline was timbered and the timbers had been broken down, cross pieces broken but timbered in solid in places to the point as described at the bottom as far as I went I got through and I could look through and I looked at the roof.
519 Q. No; my question is whether you can say whether or not that incline is not run through old stopes from top to bottom?
A. It may be, but there is rock in place showing where you can see it, where you could see it through the timbers.
Q. Were you in the Utah tunnel?
A. I was in the Utah tunnel for a short distance; I did not take any notes of the stations underground—and I could not say——
Q. It is in limestone?
A. It is in quartzite.
Q. All the way?
A. Yes, sir; as far as I went.
Q. How far in did you go?
A. Oh, I went in I presume several hundred feet.
Q. Did you go to the bottom on the old Jordan incline?
A. I did not.
Q. Were you in the line of workings on Exhibit S running from station 846 to 820?
A. No, sir.
Q. You did not go through there?
A. No, sir.
Q. Why didn't you go through that to see whether lime or ore there?
A. I did not have time. I wanted to examine this part, the main part of the territory in controversy.
Q. You went along the main No. 1 level did you?
A. Oh, yes, and out in some of its branches.
Q. Did you go out to this place marked Coolidge cross cut?
A. I did.
Q. You found this in ore there?
A. I did after I got in a ways, yes, sir.
Q. It runs up on the quartzite does it not? the Coolidge stope?
A. The foot wall is going up on ore, yes.
Q. That foot wall is dipping apparently to the south, isn't it?
A. Yes, sir.
Q. This great limestone belt dips to the north, does it?
A. Yes.
Q. After you got up the Coolidge cross cut did you go down again northerly into the No. 1 West drift?
A. No.

CLOSE IN CENTER

Q. You cannot say whether that falls down on the other side on the quartzite, dipping the other way, or not?

A. I could not. I went over the Coolidge cross cut up to where they were taking out ore.

Q. To where they taking out ore?

A. Yes, sir.

Q. Did you go along this drift, being a branch of the No. 1 West level from station 761, westerly to Station 91?

A. I went probably to nearly station 761, and probably to it.

Q. That was all in ore?

A. That was along in ore pitching to the south.

Q. Pitching to the south?

A. Yes, sir.

520 Q. And you can't say as to this other red level dipping north because you were not in that?

A. No, sir.

Q. Do you know the Clark raises, north and south raises?

A. No, sir;—well, I was in to a point—is it in this West drift?

Q. No; here, this would be the North Clark raise and here is the Clark south drift?

A. I was up that, yes.

Q. There again you go right up through the quartzite underlying the ore, both dipping to the south?

A. Yes; for 85 feet on the dip.

Q. There is a 40 degree pitch?

A. Yes.

Q. Were you in this level in white and in which are found stations, F, E, D, C, A; were you in that?

A. No, sir.

Q. You don't know what that discloses?

A. No, sir.

Q. Did you go out in the workings from the No. 1 West drift southerly from a point near station 892?

A. I did for the distance of sixty feet, such a matter, or 75.

Q. Going out until you got out here?

A. I went out in the ore here in the fissure; they running to the south.

Q. Did you go along this branch line to the southeast?

A. I did not.

Q. Is or not the ore body you speak of in your cross-examination, in which this incline is found marked No. 1B on this Exhibit 8—did you go down that incline?

A. I did not.

Q. Don't you know that the ore there is dipping to the east?

A. The ore dipped to the west, at the point where the drift shows where this branch from the west drift cuts it.

Q. There is a large body of ore there?

A. Yes; there is.

Q. Speaking of ore bodies as a whole now, I mean generally?

A. Yes.

Q. Not taking some little local point, it dips to the east does it not?

A. I could not say that it did. The ore as I saw it there dips to the west. That ore structure is in the fissure form and dipping to the west at near point 793, very plainly shown.

Q. You do not undertake to identify any fissure you found there as the Ashland fissure?

A. I found the ore in the fissure form is all.

Q. That is, the Ashland fissure if it preserved its dip as you have observed it elsewhere, when you get to that level, would be west of that ore body?

A. I have made no calculation. The ore is plated and has a different structure from the Ashland fissure ore bodies.

Q. Did you find rock such as this immediately at what you took to be the Jordan discovery?

A. I did not.

321 Q. Anywhere near it?

A. I did not. I did not examine any where near it. I simply went down under the dump and reached down and took out several pieces.

Q. Where the Jordan discovery is there is an enormous dump isn't there?

A. Yes, sir.

Q. Covering the ground there to the north east?

A. The dumps extend on to the east for several hundred feet. There is a trestle across at the discovery, and the ore is not very deep over the Old Jordan discovery shaft.

Q. Do you know what gossan is, as the miners term it?

A. Well, I have heard the term.

Q. You have heard the term?

A. Yes; I have heard the term.

Q. Right immediately to the west of the dump on which the Jordan discovery is, did you see where the rock comes to the surface near the lime belt and did you not find gossan there with the appearance as though it had been attached to the ore?

A. I saw some excavations there, but I do not know that it was the excavation you refer to.

Q. Do you know whether this gossan is what miners call oxidized iron ore?

A. There was oxidized iron showing there.

Q. The appearance to the eye was as though the ore had been attached to it and mined right up to the barren surface rock?

A. I did not examine very closely and my remembrance is there was ore apparently mined to the surface there.

Redirect examination.

By Mr. HILES:

Q. Mr. Morehouse I omitted to ask you a question on direct. Who was with you when you took these samples and made this examination?

A. Mr. James E. Beveridge. We took them together.

Mr. HILES: We offer in evidence the assay return that was testified to by Mr. Ellis.

The COURT: It will be received in evidence.
522 The same was marked "Exhibit 31, J. W. C."

EXHIBIT "31"

Henry Rives Ellis, Mining Engineer and Metallurgist.
Assay Office and Metallurgical Works, 217 South West Temple St.

SALT LAKE CITY, UTAH, *Oct. 14th*, 1902.

Samples of Rock Deposited by Mr. J. E. Beveridge.

		Gold Oz. per ton.	Silver Oz. per ton.	Lead per cent	Copper per cent
Oct. 14, 1902	No. 1	0.04	6.60	8.3	0.0
	No. 2	0.36	3.80	7.3	0.0
	No. 3	0.04	4.00	6.7	0.0
	No. 4	0.05	3.80	6.4	0.0
	No. 5	Trace	0.0		
	No. 6	"	0.0		
	No. 7	"	0.0		
	No. 8	"	0.0		
	No. 9	"	0.0		
	No. 10	"	0.0		
	No. 11	"	0.0		
Oct. 22, 1902	No. 12	"	0.0		
	No. 13	"	0.0		
	No. 14	"	0.0		
	No. 15	"	0.0		
	No. 16	"	0.0		
	No. 17	"	0.0		
	No. 18	"	0.0		
	No. 19	"	0.0		
	No. 20	"	0.0		
	No. 21	"	0.0		
	No. 22	"	0.0		
	No. 23	"	0.0		
	No. 24	"	0.0		
	No. 25	"	0.0		
	No. 26	"	0.0		
	No. 27	"	0.0		
	No. 28	"	0.0		
	No. 29	"	0.0		
	No. 30	"	0.0		
	No. 31	"	0.0		
	No. 32	"	0.0		
	No. 33	"	0.0		

HENRY RIVES ELLIS.

Filed in U. S. Circuit Court, District of Utah. Oct. 27, 1902.
Jerrold R. Letcher, Clerk.

523 JAMES E. BEVERIDGE, a witness recalled by defendant in sur-rebuttal, and having already been sworn herein, testified:

Direct examination.

By Mr. HILES:

Q. Mr. Beveridge you were with Mr. Morehouse when these assay samples were taken?

A. Yes, sir.

Q. You heard his testimony as to the various points at which you took samples?

A. Yes, sir.

Q. Now without going over again what he has testified to, I will ask you to say generally whether the statements which he has made accord with your observations and your memorandum and your memory of the facts?

A. I think there is one or two samples that he has misquoted as to the place where they were taken.

Q. Have you a memorandum of them?

A. No. 13 was one.

Q. I wish you would explain that?

A. Sample No. 13 was taken from the side of the Old Jordan tunnel; I know it was the Old Jordan tunnel in quartzite; that goes across the top of the incline that goes down to the Utah workings, and near to the first set of timbers to about 42 feet from station 269, following on that level from that, the bedding planes showing a northwesterly dip at this point.

Q. What other correction you desire to make?

A. I believe sample No. 12, I don't think he stated that correctly; he stated that as No. 13, got it mixed. No. 12 was taken from a point he has not described at all.

Q. Where is that?

A. No. 12 from 20 foot section of lime between stations 5 and 6 in what is known as the Side Show—I don't know what you call it on this map; it is the tunnel above the Galena No. 1.

Q. What is it in?

A. It is in lime. I think with that exception he has got them there nearly correct.

Q. Now, I will ask you Mr. Beveridge, if you took samples of what you call quartzite?

A. Yes, sir.

Q. Along the road and at other places on the surface?

A. Yes; I did.

Q. And some underground?

A. Yes, sir.

Q. I wish you would identify the samples and state the places where you took them from.

——.

Q. I show you sample which is marked A? What is that?

A. Quartzite.

Q. Where is that taken from?

A. That is taken from a point 10 feet west of Station No. 925,

quartzite cropping along the road which goes to the Commer-
524 cial workings, also to a white post, marked Post 1, L. 419; the road goes up in that direction.

Q. I will ask you to look at the sample which is marked with a red 5 and I will ask you if you saw any of that material in the neighborhood of this quartzite?

A. I did not.

Q. Did you see any of that in the neighborhood of any quartzite through which you took samples?

A. Yes; I did, some that resembled that.

Q. Where did you see it?

A. In what I call sample No. 13 I believe.

Q. Sample 13?

A. Sample 13 from the Old Jordan tunnel or cross, rather, that goes across the Jordan tunnel to the top of the incline that goes down to the Utah workings, that ground is found there.

Q. In what position is it with relation to the quartzite, if you know?

A. The composition is largely quartzite, although there is some lime in it.

Q. How does this lie with reference to the quartzite?

A. The structure is about the same. My recollection is that it lies over the quartzite.

Q. Lies over it?

A. Yes, sir.

Q. And against it?

A. And against it.

Q. Now proceed with these quartzite samples and tell us where you took them?

A. Sample B.

Q. That you say is quartzite?

A. Yes, sir.

Q. All these things are quartzite?

A. Yes, sir. Sample B was taken from the quartzite outcropping in place 48 feet south of white post marked P 1 L 419.

Q. Where was C taken from?

A. Sample C was taken from a point on the wagon road 70 feet northerly from post 1 419, quartzite in place. Sample D, that was taken from the wall rock in an excavation that is shown to be about 52 feet north of station 922.

Q. Point out these places; point out the place from which D was taken?

A. I do not recognize it on this map.

Q. The Jordan workings are about here on this map.

A. This sample is taken about 52 feet from this point station 922, at that point about there, as near as I can tell without measuring.

Q. About 52 feet from that?

A. 52 feet north of station 922 which would be about there.

Q. Was that taken from rock in place?

A. Yes; taken from the wall.

Q. The quartzite wall?

A. Yes, sir.

Q. Sample E; where was that taken?

525 A. That was taken from the north face in a cut about 50 feet westerly of station marked 923; it was taken about there.

Q. In some cut?

A. Yes, sir; about 50 feet westerly from that station at this point, 923, in there.

Q. Where was F taken from?

A. Sample F was taken from the north face of large excavation near station 923; it was taken about there.

Q. That is the same thing?

A. The same thing.

Q. Sample B?

A. That was taken from the tunnel running north about 40° 45′ west a distance of 58 feet back of the Old Jordan workings in quartzite.

Q. Where is that?

A. A little cut in here; I don't know that I can place it, may be about this point; it is all between this in that little tunnel that is running to the surface there.

Q. These are all quartzite that you are testifying to?

A. Yes.

Q. Are there any others?

A. H and I, there.

Q. Have you H in the bag marked?

A. Yes; in the bag.

Q. Is that material that you took contained in this bag?

A. Yes; did you get this out of the bag?

Q. Yes; I got that out of the bag?

A. Sample H was taken from the easterly face——

Q. Where is it?

A. That is it in the bag.

Q. What material is it?

A. It is a mixture of everything, being matter and everything else, taken from right down across the face everywhere; that eastern face, the largest piece is from right there.

Q. Where is I?

A. In the bag too.

Q. Where was that taken from?

A. Sample I was taken from the drift running north 18 feet from station 755, United States Mining Company Galena tunnel No. 1; it is a drift that runs from station 755, and would be found on the Galena tunnel No. 1 taken from the face of the cut.

Q. What is the material?

A. Quartzite.

Q. Can you indicate where that was?

A. I will have to get the map; 755 right here; that is it, taken right across this place here.

Q. That was I?

A. I.

Q. Does that conclude the quartzite samples?

A. Yes; concludes the quartzite samples.

526 Cross-examination.

By Mr. DICKSON:

Q. Do I understand you that specimen marked 5 in red is found immediately overlying your No. 13?

A. It is in that neighborhood; I don't know that it lies immediately over it; I recognize the rock as coming from that tunnel.

Q. You mean that kind of rock is found immediately overlying 13, which you call quartzite?

A. No; the quartzite I took my sample from—my sample is taken from similar rock to that.

Q. Yes; I understand your sample 13 is?

A. Yes.

Q. That you call quartzite?

A. It is not all quartzite but lies immediately over the quartzite.

Q. It is not all quartzite?

A. I do not claim that is all quartzite.

Q. Your sample 13 was not all quartzite?

A. No, sir, but nearer that than anything else, and under the general term quartzite.

Q. And immediately overlies what you call true quartzite; is that it?

A. Yes.

Q. What is that letter there?

A. That is C.

Q. Is not that porphyry?

A. Well, there is some porphyry in it but the general term is quartzite.

Q. Is not that unmistakably porphyry?

A. No, sir; it is not.

Q. Is it porphyry or quartzite?

A. Quartzite.

Q. What do you mean by saying some porphyry in it?

A. I think there is some porphyry in it; it is hard to get any rock without porphyry in it in that country.

Q. You understand that porphyry is an eruptive rock?

A. Yes, sir.

Q. And that quartzite is a sedimentary rock?

A. Yes, sir.

Q. And you found a sample of quartzite here with some porphyry in it?

A. Yes, sir.

Q. Which end of that piece of rock is porphyry and which end quartzite, of that sample C? Which end is porphyry and which end is quartzite?

A. I don't know that I could draw the distinction between them.

527 R. G. LEGG, a witness produced by defendants in sur-rebuttal, and having been already sworn herein, testified:

Direct examination.

By Mr. HILES:

Q. Mr. Legg, have you examined the ground in the neighborhood of the Kempton and the Ashland outside of the lines on the east for the purpose of determining whether there is lime and quartzite both underground and upon the surface and the relation which the lime and the quartzite bear to each other, if there be such?

A. I have.

Q. And also with reference to the existence of porphyry?

A. Yes; to some extent.

Q. Now going east from the Kempton and taking up the Galena claim. You know where the Galena claim is?

A. Yes; about.

Q. What is calleed the Galena fissure. What examination did you make of it for the purpose of determining the relation between the quartzite and the lime on the surface and underground in that neighborhood, on that claim?

A. I went on over the surface, from the Kempton to the mouth of the Galena No. 1 tunnel; I went into what is called the Side Show tunnel I believe, passed into both tunnels to the end, or as far as we could get into it.

Q. Now go on in your own way Mr. Legg and state what you saw there and proceed as rapidly as you can?

A. At which point first?

Q. Start at any point you choose, where you commenced your examination and proceed as rapidly as you can and describe what you saw in the way of lime beds and quartzite beds?

A. Here is the tunnel that I see here that I went into, is the Neptune tunnel. I went into that 240 feet to the contact between the lime and the quartzite as described. Before reaching the contact between the lime and the quartzite, however, I passed through the fissure—I do not see it marked on here. There was a fissure in the quartzite.

Q. Here is the mouth of the tunnel here?

A. I understand it. That is also in the Neptune tunnel—I went in about 240 feet and reached the contact between the lime and the quartzite.

Q. What did you find there?

A. I do not distinctly remember; I believe there was a little sulphides along in the contact but just before reaching the contact we passed through what I understood to be the Rip Van Winkle fissure from which ore had been taken and stoped out. We then continued on through limestone clear on to station 512.

Q. Continued right on through this drift?

A. Right on through this Neptune tunnel, right on to station 512 through lime the entire distance and the only ore that I
528 seen in passing through there was in the fissures cutting through the lime beds.

Mr. DICKSON: That was a part of their case in chief.

Q. I do not care about that; I think the objection is good. I want you to keep outside of the Kempton ground. You were you say in the Galena?

A. Well that is as far as I can go there and then we found quartzites in through the mouth of this tunnel at the boarding house, the Kempton boarding house, here is an open cut that I do not see on this, and just above this old tunnel there is a large excavation on the surface, and just about at this point there is an exposure of quartzite.

Q. In speaking of the old tunnel you mean the old tunnel on the Galena claim?

A. The Side show tunnel on the Galena claim I believe Mr. Jessen has it marked Side Show tunnel, just below that but the quartzite did not show in the tunnel—yes, it does; the mouth of the tunnel is in quartzite and extends about to station 2 or a little beyond; then you enter the limestone and continue in ore to the end in lime.

Q. Did you find any quartzite upon either side?

A. Down below here, from down close to the bottom of the gulch; I paid very little attention to that however.

Q. I want to ask you another question or two on this now, Exhibit T, at a, b, c and d, which purport to delineate certain excavations, surface excavations; were you in those?

A. Here is the Neptune tunnel here.

Q. This represents the Galena No. 1 tunnel?

A. I think it does.

Q. Were you in this open cut?

A. No, sir; I was not in the open cut.

Q. You did not examine that?

A. No, sir.

Q. Go on in your own way and explain what you saw in the way of quartzite and lime.

A. Well, I went down through the United States tunnel No. 1; we went in there about 287 feet.

Q. Through what?

A. Limestone and came up against the quartzite. That tunnel runs I believe northwest magnetic, and we continued along the quartzite and the limestone to the excavation 507, and there this cross cut starts off and follows in quartzite to this point 754.

Q. That is through quartzite?

A. Yes; a distance and beyond that some porphyry about 30 feet I think, and then coming back here I followed along between
529 the quartzite and lime to station 765.

Q. Between the quartzite and lime you say?

A. Yes, sir.

Q. I will ask you whether to the right as you go from 507 to 755 there is quartzite upon the right and lime upon the left?

A. Yes, sir; as you go in.

Q. Let me ask you if you observed how the lime beds dipped if they do dip at that point?

A. There was one or two places there that there was a slight exposure of the bedding planes. They dipped to the north slightly.

Q. Dipped to the north.

A. Yes; there is an opening I went into that I took to be a raise; I started upon the raise following up on the quartzite; the raise extended up about 85 feet I think altogether, or 75.

Q. On the quartzite?

A. On the quartzite.

Q. In the fissure?

A. No, sir; in the contact between the quartzite and the lime.

Q. On the contact?

A. On ore up to about one half of the way 40 feet, and the other 35 feet continued up wholly in oxidized matter in the contact, and then the drift started off to the north a short distance and then up another opening in there in quartzite. The drift at the top is in quartzite. I came back again and went further on to a cross cut, I think 755, where that cross cut is where some ore was exposed, considerable ore.

Q. In the lime?

A. No, sir; in the contact.

Q. On the contact?

A. From here, 782, there is a cross cut running back through the lime to the foot of the incline called the Jackson incline. There is no ore that I have any recollection of being exposed there.

Q. That is in the Rip Van Winkle cross cut?

A. Yes, sir.

Q. Returning back to the Jackson incline, what did you find in that?

A. I found nothing but limestone.

Q. Is there a fissure?

A. There is a fissure, a crack in the lime.

Q. Well what were the walls on each side?

A. Simply limestone on both sides.

Q. Solid or crushed?

A. Solid limestone, massive limestone. Here is another place I have not testified to and may have been the one that I took for this. I went back in a cut on ore.

Q. What is that?

A. It is station 755—I don't understand it.

Q. What is this on that you are testifying about now, called the Coolidge cut?

530 A. I want to straighten this out; this 755 was on the contact, and here is another 755. What that is I don't know.

Q. Yes; there are two 755's on our map. Can you tell on this map where the Coolidge cut is?

A. No, sir; I don't know where the Coolidge cut is? I want to look at my notes on account of these two stations having the same number to see where I am at.

Q. You had better pass to some other subject if you haven't got your notes; we cannot wait for witnesses to refer to their notes?

A. But there is an error in the map.

Q. Well, I can't help that. Proceed, proceeding west on that drift what do you find?

A. Well, it is principally limestone until we get to 717-a wherever that is.

Q. What do you mean by principally limestone?

A. From station 755 I noted in the drift had the calls to where the ore was exposed from that point on it was all lime with the exception possibly of one, two or three cross fissures containing a little sulphides. Outside of that the remainder was all hard limestone.

Q. How does the drift go with reference to the lime bedding planes?

A. Why, the drift runs nearly parallel with the bedding planes, the fissure structure with the beds.

Q. What do you mean by parallel to the strike?

A. Running in the same direction with the strike? yes.

Q. Running along with the strike of the lime of the bedded vein?

A. Yes, sir.

Q. And all in lime?

A. All in lime with the exception of ore which shows in those places.

Q. Now going east in that country did you make any examination of the surface or underground workings along the Old Jordan?

A. No, sir; I did not.

Q. Do you know where the Commercial is?

A. I do.

Q. Did you make any examination of the surface there?

A. I did not.

Q. Or underground?

A. No, sir.

Q. Is that the extent of the examination which you made?

A. It is outside of what I made of the workings.

Cross-examination.

By Mr. DICKSON:

Q. On some of these raises there is some doubt as to their location where you found quartzite you found it dipping to the north or to the south?

A. To the south.

Q. To the south?

A. Yes, sir.

Mr. DICKSON: That is all.

531 ADOLPH JESSEN, a witness produced by defendants in surrebuttal, and having already been sworn herein, on oath testified:

Direct examination.

By Mr. HILES:

Q. I wish you would explain what these tracings represent (Referring to map marked "Exhibit 32, J. W. C.)

A. The map on the right hand side is a preliminary sketch of which I made this portion; that is, it represents a vertical cut through

the hill running through showing the Rip Van Winkle fissure, it runs through the top of the Jackson incline and extends over also into what we call the north and south fissures in the Commercial tunnel; a part of that I have made which represents the contour of the surface of the hill. What I have done on it is all in black ink.

Q. The contour of the surface of the hill starting where?

A. From a point somewhat to the southwest of the mouth of the Neptune tunnel.

Q. Leading over the hill?

A. Yes, sir. I passed the Rip Van Winkle, what I understood to be called the Rip Van Winkle incline and then it goes to the Jackson incline, and then it continues over the hill and across the gulch up on the other side of the hill until it reaches the northerly end of one of the north and south fissures in the Commercial tunnel. It shows the point where the lime crosses the Neptune tunnel at that point. This is supposed to represent the Rip Van Winkle incline, this the point where the Rip Van Winkle tunnel intersects the incline. This represents the Jackson tunnel and the cross cut. This point there is the point where the section goes on to a drift from the United States No. 1 tunnel and this represents a cross cut from that point to the bottom of the Jackson incline. This point there represents a small drift.

Q. How is it marked?

A. It is marked in pencil. It is a preliminary sketch; it is marked raise. One part of it is marked raise and connects with a small drift from the No. 1 West drift and then a raise and drift from the top of that raise.

Q. What is that point you are testifying about? Is it marked on the tracing?

A. Yes; it is marked West drift United States tunnel No. 1. This is the northerly west drift.

Q. Is that intended to represent the point?

A. The point where the section cuts that drift. There is a point here marked elevation 1023; that is a point that is nearly intersected but not quite, near the point of intersection of the north end of the right branch of the United States tunnel No. 1.

532 Q. This point here is?

A. That is marked the Commercial tunnel. That represents the point where the section cuts the drift from the United States tunnel the drift on the North and south nssure which is exactly on that point. Then we come to a place marked No. 2 West drift, the Sampson cross cut at an elevation of 910 on the south side of that is the No. 2 West drift and from that runs out what is called the Sampson cross cut. At a point there marked Emma drift represents the point where the Emma drift after having cross cut, runs for some distance on the Rip Van Winkle fissure starts and continues west. At this point——

Q. Marked what?

A. Marked Emma drift. The Emma drift enters or intersects the Rip Van Winkle fissure, and the part that is south of that is a drift on the Emma level in that fissure.

Q. Now I will ask you if all these tracings which you have described as being yours are correct and made from actual surveys by yourself?

A. No, sir; they are not; they are nearly all taken from Mr. Smith's map.

Q. What of them are yours and what Mr. Smith's?

A. The Commercial tunnel on the north and south fissures is by me and one end of the right branch of the United States tunnel is by myself. The Neptune tunnel is by myself; the balance is by Mr. Smith—from Mr. Smith's maps.

Q. Mr. Smith is the surveyor of the defendant?

A. Yes, sir.

Q. And he obliges you by giving you that data?

A. He was so kind as to give me a blue print of his map about a month ago and from that this was taken.

Q. Have you any reason to doubt Mr. Smith's work is accurate?

A. I have no doubt but that it is accurate.

Q. And it is trustworthy?

A. Yes, sir.

Q. Now the other part of the tracing is not by you?

A. No, sir.

Mr. HILES: I offer that in evidence so far as it relates to the tracings made by the witness.

Mr. DICKSON: I have no objection.

Said Section sketch was marked "Exhibit 32, J. W. C."

Q. Coming to this other tracing to the left, state what that is?

A. That is to represent a section of ground commencing near a little cut at the United States Company's office there. At a point called cut, at the elevation of 918 feet, it represents the contour going northwesterly and gives the elevations of it by my survey as
533 far as the mouth of the Commercial tunnel No. 2, marked so upon the map. From there it is Mr. Smith's showing as near as I can get it from the contour line upon the map; I have shown it according to Mr. Smith's map, the point where that section line intersects the West drift of the Mill tunnel at an elevation of 907 feet; also where it intersects a branch of the Mill tunnel; I think this is the West drift of Mill tunnel; this is the main tunnel at an elevation of 907 feet; this where it intersects the Drain tunnel at an elevation of 838 feet; this where it intersects the east drift of the Mill tunnel at an elevation of 922 feet; this where it intersects the West drift of the Utah tunnel and where it intersects the No. 2 West drift at an elevation of 912 and where it intersects the level from the Commercial tunnel. That is what I have put upon that map.

Q. And the other tracing on the map you have had nothing to do with?

A. No, sir.

Q. Those which you have made are correct according to the surveys made by yourself?

A. By myself and Mr. Smith.

Mr. HILES: I offer that in evidence.

The same was received in evidence and marked "Exhibit 33, J. W. C."

Cross-examination.

By Mr. DICKSON:

Q. What you mean is Mr. Jessen that you got certain data from Mr. Smith's map in reference to the position of certain workings with reference to the plane of the section?

A. Yes, sir.

Q. You did not put any of the geological features on it?

A. No, sir. I had no idea of putting any of the geological features on it.

WARREN L. WILTS, a witness produced by defendants on surrebuttal, being first duly sworn, testified:

Direct examination.

By Mr. HILES:

Q. Your name is Warren L. Wilts?

A. Yes, sir.

Q. You are a miner by occupation?

A. Yes; I have followed it.

Q. For a good many years?

A. Yes; since 1878.

Q. You have mined in the West Mountain Mining District?

A. Yes, sir.

Q. Do you know a mine up Bingham Canyon called the Old Jordan mine?

A. Yes, sir.

534 Q. Do you know a section of country up the Canyon there wherein are certain workings called the Black Hawk and Spanish stopes?

A. Yes, sir; we always called it the Spanish.

Q. In what mine is that?

A. The Spanish?

Q. Yes.

A. It is what is known as composed of the Black Hawk and Spanish — other claims constituting that group; I don't know what name they call them by now.

Q. You don't know the names of the claims?

A. I don't know the names of the claims.

Q. But you know the place?

A. Yes, sir.

Q. What have you ever had to do with it?

A. I have worked in the Spanish, I think I worked in most every place in it, all through it leased and worked there for wages.

Q. How long ago and for what length of time?

A. I think it was in 1888, on a lease that I worked there; I worked there in 1878.

Q. There is a tunnel there called the Spanish tunnel is there? Do you know what tunnel that is?

A. The probabilities are that these tunnel names have been changed. We called one the Lounsbury tunnel, lower tunnel, is what we used to call it; that is when Mr. ——— owned it when he was up there; but they have probably changed it and given it different name now.

Q. Do you know a claim called the Black Hawk?

A. Yes, sir.

Q. Was it in the neighborhood of the Black Hawk?

A. Right near there as I understand them.

Q. They are altogether there?

A. Yes, sir.

Q. You say you worked there as a miner for wages and also as a leaser?

A. Yes, sir.

Q. In what were the workings, what kind of rock; what kind of a lode was it?

A. Why it was in large deposits, sometimes in the quartzite and lime we call it, occasionally lime and some places quartzite.

Q. Any place where there is porphyry?

A. Yes; there was some porphyry in there but at the time I worked there we hardly ever touched this porphyry any more than to come to it, because it was a very base material.

Q. I will ask you whether there were any north and south fissures there?

A. Yes, sir.

Q. What were the workings in? Were they in the fissures?

A. Where the fissure intersected this mineral belt as us miners used to call it, there was large deposits of ore right there.

Q. Did you find ore in the quartzite?

535 A. There was ore in quartzite, yes.

Q. Were there north and south fissures there?

A. Yes, sir.

Q. How many?

A. Three that I know of that comes into the Spanish ground as we called it.

Q. What were they called?

A. One of them called the Northern Chief. The Northern Chief mine is located upon it; I leased upon that for four years. The Northern Chief claim does not reach the Spanish, but there is a claim in between called the Harrison, I think, Harrison something, and San Francisco, I think is on fissures between the Northern Chief and the Spanish.

Q. What other fissure is there besides these?

A. There is another fissure running through the Irish American mine; I don't know whether it is on the map.

Q. Any other fissure there than the Irish American?

A. Yes; the Silver Shield.

Q. That runs through that ground?

A. Yes, sir.

Q. They are north and south fissures?
A. North and south fissures.
Q. In quartzite?
A. Why I think where the Northern Chief fissure enters the Spanish belt as we call it, was in quartzite but where the summit of the Northern Chief is is in porphyry, there is a bluff apparently of quartzite between the Spanish and Northern Chief, the summit of the ground as we call it.

Cross-examination.

By Mr. DICKSON:

Q. There are a great many fissures in the limestone belt are there, running in different directions?
A. Well, I should say that the probabilities are that there are fissures?
Q. You have not worked at it since 14 years ago?
A. I have not worked there. I think it is 1888 when I finished work there.
Q. Have not been back there since?
A. Yes; often.
Q. Examined the ground carefully since?
A. No, sir.

JAMES W. NEILL, a witness produced by the defendants in sur-rebuttal and being first duly sworn, testified as follows:

Direct examination.

By Mr. HILES:

Q. Your name is James Neill?
A. James W. Neill.
Q. What is your business?
A. I am a mining engineer and metallurgist.
536 Q. Have you taken a course at school in that line?
A. Yes, sir. I graduated at the Royal School of Mines in Clausthal in the Hartz Mountains in 1878.
Q. And since your graduation you have followed that business?
A. Actively engaged in it as my business.
Q. Do you know the mining ground that is in controversy in this suit called the Kempton and Ashland?
A. Yes, sir, I believe I do.
Q. And Old Jordan?
A. Yes, sir.
Q. Were you ever connected with the United States Mining Company as an officer or manager?
A. I was their General Superintendent for something over a year.
Q. In what year?
A. Commencing in April, 1900, and running until May, 1901, I think are the dates—May, 1900, was when I left the company.
Q. Do you know a tunnel or drift called the United States tunnel

No. 1 or west drift leading out westerly from a point near the old Galena mine?

A. Yes, on the Old Jordan?

Q. Yes?

A. Yes.

Q. Under whose supervision was that drift made?

A. Under mine.

Q. For what purpose did you drive it?

A. For the exploration and development of the ground and the general purpose of developing the western end of the ground.

Q. For the general purpose of developing the western end of the ground. Where is that with reference to the Fairview, Grizzly and Northern Light claims?

A. Well, they are to the west of the ground on which the mouth of that tunnel opens out.

Q. Well, I will ask you the question whether the tunnel was driven with reference to the Fairview & Northern Light and more for the purpose of developing those claims?

A. It was not started for that purpose.

Q. Through what kind of rock does the tunnel extend for the most—all the way, for that matter?

A. Through limestone and ore.

Q. How much of it is driven through limestone?

A. Starting at the entrance, it is for some distance in limestone. It then cuts through some old stopes; the distance, Judge, I cannot give you, because it is two years and a half since I was in the ground, but it cuts under the old stopes; then passing along through here for some distance, leaves the ore, and thence, as far as I know, the opening is in the limestone.

Q. How far do you know it to be in the limestone?

537 A. I have not been in the mine since I left there nearly two years ago.

Q. Well, about what distance would you say?

A. Well, if I could see a map of it I could tell you about where it was. No, 1 west drift?

Q. Yes.

A. At about that point (indicating).

Q. Back from that to what point was it in line?

A. From about this point here to about that point there.

Q. What would be the distance?

A. These squares are one hundred feet, are they?—a little over nine hundred feet.

Q. Call the station numbers so that the record will show?

A. From about the crossing of No. 1 west drift with the westerly side line of the Fairview.

Q. You will find a station there?

A. There is post No. 3 of the Fairview claim about that point, which is marked here—about point 509, elevation 1020.2.

Q. When you say lime you mean barren rock as contradistinguished from ore, do you?

A. Yes.

Q. Now you know a mine called the Old Telegraph mine?

A. Yes, sir.

Q. I wish you would state what that mine is on with reference to a fissure, whether it is a fissure or not?

A. Why, that mine, Judge, is in the bedded vein, in what has always been spoken of as the Jordan and Telegraph bedded vein.

Q. I will call your attention, Mr. Neill, to the photograph marked "Photograph 2" and ask you to say if you can see upon that photograph the locus of the Telegraph mine?

A. I identify it as this hole in which there is a large building and bunk-house.

Q. Where does the mine lie with reference to that?

A. On both sides. In fact, that house is located over a valuable ore body.

Q. Where is the tunnel, the Old Telegraph tunnel which enters the mine, if there be one there?

A. There are a number of tunnels whose entrances show upon this; but the principal working tunnels, Judge, if that is what you mean, enter lower down, that is, farther to the north than this building. This being the top house, right where I am touching my finger, about fifty feet from the building.

Q. What is the country rock there, if there is any country rock—the country rocks surrounding the ore bodies?

A. Limestone and chert and quartzite on the foot.

Q. Where is the foot on that photograph?

A. The footwall lies on this side to the south.

538 Q. What is this elevation to the left—this hill?

A. That hill—the front portion of it is shown to be porphyry.

Q. I will ask you whether this photograph does not show the road leading up the canon to the Kempton ground?

A. Yes, very clearly.

Q. That road leads up the canon. This you say is porphyry?

A. My recollection is that hill is porphyry.

Q. How does that lie with reference to the footwall of the Old Telegraph?

A. That overlies the ore bodies in the Old Telegraph at that point.

Q. It overlies the lime?

A. Yes.

Q. How is this lime connected with the lime there on the north side of the porphyry?

A. Not through any workings that I know of.

Q. This cuts off the Telegraph lime from the lime in the canon, does it not?

A. I believe so, yes.

Q. Is there any fissure there called the Giant Chief fissure?

A. Yes, sir.

Q. How does that extend?

A. Northerly and southerly.

Q. Northerly and southerly from the foot to the hanging?

A. Clear through the country.

Q. Clear through the country—through the quartzite, porphyry and lime?

A. As to being through the porphyry, I cannot tell. I have only its extension through the quartzite and the lime.

Q. Where is the mineralization with reference to the fissure?

A. The Mineralization is in the fissure itself and spreading out from that fissure into parts of the limestone.

Q. As among mining men, what do you say as to the agency of the fissure in the mineralization of the bed?

A. Agency?

Q. Can you say whether the mineralization of the bed is attributable to the fissure in any way?

A. The fissures opened the beds, allowing for the percolation of the mineral solution which I believe ascended through the fissures.

Q. Is it your opinion that the fissures antedate the mineralization?

A. Yes, sir.

Q. Now going west up the canon, do you know of any fissures cutting across the lime bed?

A. Yes, a number of them.

Q. How many? What are they? What are their names?

A. Why, I would have to think. Let me see, there is the Giant Chief.

Q. The Silver Shield?

A. The Silver Shield, and one between those I do not remember the name of.

539 Q. Know of the Live Pine?

A. The Silver Shield, the Live Pine, the Condor, the Galena those I think are the principal ones. There may be one or two others that I do not remember.

Q. Do you know anything about the Rip Van Winkle?

A. Yes, the Rip Van Winkle.

Q. I will ask you if you had anything to do with the development of the lode through what is called the Emma drift, from the west Emma drift?

A. The development of the—

Q. The Rip Van Winkle fissure?

A. Oh, of the Rip Van Winkle fissure?

Q. Yes.

A. Not through the west Emma drift. That work was done before.

Q. That had been done before?

A. Yes.

Q. Now what is your opinion as to whether the fissures which you have named were before the mineralization or afterwards?

A. I believe the entire mineralization of this limestone bed had its origin through these fissure systems, therefore the fissures were probably later than the beds. That is furthermore proven by the fact that they fault the beds.

Q. In these fissures do you find the bed vein plated up with the fissure; that is to say, the ore body in the fissure plated or laminated with the fissure?

A. In places.

Q. What is the structure in other places?

A. In places the fissure is entirely destroyed within the ore bodies in the limestone belt.

Q. Have you ever noticed a case where, within the limestone bed, the lamination was in the direction of the fissure and across the bed?

A. Yes, sir.

Q. Where?

A. In the Old Telegraph, on the Northern—on the Giant Chief and in the Northern Light fissure.

Q. In the Old Telegraph?

A. In the Old Jordan, at that end.

Q. The Northern Light fissure; that is the fissure out here at the end of the west drift?

A. Yes.

Q. You have noticed that—observed that structure?

A. Yes, sir.

Q. And lamination of the ore with the strike of the fissure?

A. Those are the two most prominent instances that I remember.

Q. Do you know what is called the Ashland fissure?

A. That is the fissure which is supposed to extend down here. Yes, I know that.

540 Q. I will ask you whether the Northern Light fissure is a continuation of this Ashland fissure?

A. I believe it is.

Q. A continuation north. Now I will ask you, Mr. Neill, whether in this No. 1 west drift you observed, at a point some two hundred and eighty or three hundred feet from the portal, whether it was quartzite to the right and lime to the left?

A. Yes, sir, it is.

Q. For what distance?

A. For a distance of about two hundred feet there where the drift follows on this contact; maybe a little more or a little less. It is about two hundred feet.

Q. How was it exposed there—the quartzite and the lime?

A. Why, it is exposed on the right hand of this drift as you are going west. It is shown by this red raise in the Emma stope, and it is shown by a raise coming up here, and a little further on I think the drift itself leaves that contact; that is why I have limited it here to about two hundred feet.

Q. To the left in the lime bed. Can you observe from this drift how the lime bed is dipping?

A. The beds have their normal dip and strike, I think.

Q. At that point to the north?

A. Dip to the north, yes.

Q. Now I would like to know, Mr. Neill, if along this contact of the quartzite with the lime in that tunnel you observed at any place whether the quartzite showed any evidence of striation or slipping on the lime?

A. The quartzite is covered over, but there are evidences in that raise of some movement, if that is what you are asking.

Q. Yes, what is the evidence of movement?

A. Slickensides is usually considered such, and they show in that raise.

Q. Slickensides, that is a sort of clayey substance?

A. Yes, a clayey substance.

Q. And that you saw in the raise?

A. I saw that in this raise from the Emma stope and up to No. 1 west. It shows there.

Q. Speaking now of the Emma stope, it is a fact, is it not, the Emma stope is on the Old Jordan claim, across the Jordan?

A. The Emma stope is represented by these square sets. Here it is marked "Big Emma." I think a portion at least is on the Jordan claim, yes.

Q. State whether that is on the north and south fissure?

A. Yes, sir. There are two fissures going through the Big Emma stope.

Q. What are they called?

541 A. We always speak of the westerly one as the West Emma, and the one to the east I do not remember that we had any name for it.

Q. There are two fissures, one called the West Emma fissure—do they cross from the quartzite?

A. I think they do.

Q. Do you think they enter the quartzite at the foot-wall.

A. I would not be sure that they did. I did not think there is any drift into the quartzite there.

Cross-examination.

By Mr. DICKSON:

Q. You spoke in direct examination of this No. 1 level being in limestone or ore from the portal at the station out to the end, in limestone or ore, and then pointed out beds where there was ore and limestone, as I understood you?

A. Yes, sir.

Q. And then you were asked, when you spoke of limestone, if you meant barren limestone and you said yes?

A. Yes.

Q. When you speak of limestone in that west drift you do not mean country rock, do you? You mean lode limestone, don't you?

A. In this case there is no difference.

Q. Is it your opinion that that west drift is in what is called the Jordan bedded vein from one end of it to the other?

A. It is in the Jordan limestone.

Q. Is it in what you understand to be the bedded vein?

A. It is in the Jordan limestone belt.

Q. You think it is a part of the Jordan vein, or have you changed your mind about that since you left the mine?

A. If you denominate this entire limestone, three hundred feet or more in thickness, the Jordan vein, then that opening certainly is in the Jordan vein, yes.

Q. You have the belt of limestone between quartzite hanging and foot, and some places porphyry hanging?

A. Yes, sir.

Q. And this drift is in that belt of limestone?

A. It is.

Q. And is it your opinion that that belt of limestone is a lode, an entity to be treated as a lode, and that it is entitled to everything on its dip to the north, except some cross fissure or cross veins that might be encountered, such as the Galena and Ashland, which would extend outside of the belt of limestone; isn't that your opinion? From two years' work in directing the operations of the mine, didn't you reach that conclusion?

A. You are asking me there my opinion on a legal question.

Q. No, I am not asking you on a legal question. Isn't it your opinion, as a miner and mining engineer, a man of exten-
542 sive experience, that that can only be practically treated as one lode?

A. No, sir, it is not.

Q. And haven't you heretofore stated it is as your opinion that the ore bodies underlying the Grizzly and the Northern Light ought to be controlled by this apex in the Jordan mine, and so reported to your company by letter and by reports?

A. I think not.

Q. Did you not advise your company to purchase the Northern Light and Grizzly and Fairview?

A. I did.

Q. And forestall any possible litigation that might arise if these claims fell into the hands of persons with money and who were desirous of forcing a compromise?

A. Not at all.

Q. And didn't you in the same letter state to your employer that you thought the ore body ought to be controlled by this apex in the Jordan?

A. I do not remember that I did, sir.

Q. And didn't you also say that the great ore deposits found in the Jordan Company's properties were contained in this limestone from east to west?

A. So they are.

Q. I read from a letter, of which I have no doubt you wrote, dated April 16th, 1899, letter handed to witness). Is that your letter?

A. Yes, sir, that is my signature.

Q. It is divided into paragraphs. It is headed in different subjects, taken up by the writer in order. I read this:

"Northern Light, Grizzly, Fairview.—These claims lie in relatively the same position in regards our ground that the other two do; that is, they cover the surface under which we will sooner or later wish to work. All have ore, mostly in fissure veins, which, however, will in depth run into our bedded veins, and there no doubt make bodies of ore, we should be able to control the Jordan vein on its dip under this ground."

What did you mean by that, that we should be able to control these ore bodies in the Fairview and Northern Light under the Jordan vein on its dip?

A. I meant just what it said.

Q. Your opinion then was that the Jordan vein at the surface here at its apex on its dip ought to control the ore bodies lying out here to the north under the Fairview and Northern Light, didn't you?

A. Not in that sense at all.

Q. "We should be able to control the Jordan vein on its dip under this ground, and if I owned these claims I would undertake to make a lawsuit or two with which to force a settlement, and I know that should those claims fall into the hands of parties with money, and desirous to do so, they can make us trouble." What did you mean by that?

A. I do not remember having written that, but I do not doubt it is there, Judge. I do not think that you would interpolate anything there at all.

543 Q. I am sure I would not.

A. I think that statement written from the engineer in charge of the works to his company was in the way of advice towards the purchase of this ground.

Q. What did you mean when you said in that letter that you thought the Jordan vein ought to control these ore bodies on its dip?

A. I do not think that that letter implies that at all.

Q. Well, it speaks for itself?

A. That letter says we should be able to control these ore bodies by following the dip of the Jordan vein. That is what it says in effect. May I read that again?

Q. Certainly.

A. It is under the head of the Northern Light and Grizzly and Fairview.

Q. The Story is one of them?

A. The Story is one of them, yes. It was probably meant as written.

(Plaintiff then offered in evidence the letter before referred to which was marked Exhibit RR.—J. W. C.)

EXHIBIT "RR"

James W. Neill, Metallurgist & Mining Engineer.

SALT LAKE CITY, *April 16th*, '99.

Edward A. Clark, Esq., 8 Congress Street, Boston, Mass.

DEAR SIR: Pursuant with my promise to you, I have this day seen Messrs. Mullet & Davis, the parties who hold the bond and lease on the Storey and Colorado claims at Bingham. If you will consult your maps you will see that these claims are practically surrounded by the Niagara ground, the Colorado lying closely parallel with the Commercial group and near it, while the Storey lies further down the

hill, right in the middle of what has been and is likely to be in future good producing ground.

Colorado.—This claim I have not examined closely, but M & D tell me that if it is older in location than the Commercial ground, it will certainly take the ground or rather the ore away from the Commercial people as the Colo. carries the apex and can go under the other on the dip.

This matter of age of location I will look up at once and report. It is very doubtful to my mind if the "Apex" rights on many of these claims can be upheld in full, and I would at this writing and with insufficient knowledge hate to promise much "extralateral" rights to either the Storey or Colorado; both would make bitter law suits, probably hard to win.

544 On the Colorado we could no doubt make it very unpleasant for the Commercial people, but we can probably do that anyhow with the Maple Tree and other adjoining claims, if it should be necessary to fight.

Storey.—This claim covers ground under which sooner or later we will want to drive the Niagara (Franklin) tunnel to get out under the Old Jordan workings, also the ground carries a piece of the apex from which the owners could no doubt develop a very obstinate lawsuit and make much trouble with us on the dip of ore bodies to the N. & W. from the Spanish Vindicator etc. I have not been in the Storey mine for sometime, but when there I saw good bodies of both iron and lead ores & Mr. Davis tells me that these were increasing on value as depth was gained and the water drove them out. Just now the mine is flooded by the melting snow and it will not be possible to see the bottom before July.

The leasers have not been able to ship anything but the best of the ore and the bodies now opened would pay well for concentration and smelting in company works. The financial part stands as follows. Messrs. Mullet & Davis have a lease and bond on these two claims for $75,000.00 *each,* said bond running to the 15th of May next! (1899)

They will of course be unable to take up these bonds, and are of the opinion that the Owner will raise the price, I agree with them here.

They belong to Mr. Moylan C. Fox of this city; he is a wealthy man who has no idea of mining them himself but also no idea of selling at any reasonable figure. I know him quite well and know him to be a very hard man to deal with, hence I think that to us he would probably raise the price. Possibly he would consent to take part payment in U. S. Co. stock should we wish to exercise the M. & D. options?

M. & D. are in a place where they say that they will surrender these to us and we to say what it is worth (to M. & D.).

I can easily see Mr. Fox and ask him flatly what he will take for the two claims, as if I did not know that M. & D. have the bond; but this will put him on his guard and give him the opportunity to raise his price.

Northern Light, Grizzly, Fairview.—These claims lie in relatively

the same position in regards our ground that the other two do, *i. e.*, they cover the surface under which we will sooner or later wish to work; all have ore, mostly in fissure veins, which however will in depth run into our bedded veins and there no doubt make bodies of ore. We should be able to control the Jordan vein on its dip under this ground, but if I owned these claims I would undertake to make a lawsuit or two with which to force a settlement; and
545 I know that should these claims fall into the hands of parties with money and desirous to do so they can make us trouble. These claims are now held under bond by Dr. T. B. Beatty of this City, he was lately in Boston and may have seen you, is now in N. Y. at the Grand Hotel. He is a close friend of mine, and I told him that if he took these claims to you I would turn him down if he "loaded" them too high, and for the reason that we did not *need* them. This is true for the present, but it might be better to buy them now for a price and avoid litigation and trouble later and perhaps at a time when we could not afford to have it tie us up. I think I can make Beatty accept a reasonable compensation for what he has done on these claims.

I have examined them, so far as practicable without doing some pumping, and know them to carry ore, and some of it good ore; they also undoubtedly carry the apex of the Commercial vein for their width.

Neptune and Kempton.—The Neptune is I believe covered and practically owned by us, but the Kempton is not and it may be classed with the others as a "problem."

I am on the still hunt for an interest or a control of two groups of claims which lie on the side lines and end lines of the Highland Boy ground to the N. & E. This ground has ore in it, whether the H. B. or the Commercial vein I cannot *now* say, but it covers ground under which the H. B. people will soon want to work, and I think a part of their ore body is now vertically under one of these claims! It might be "handy" to have an interest in such a proposition as this as a sort of insurance against "stock raids and things of that sort? I think I could make it interesting for the H. B. to prove that they owned the ore under this ground! See? The party who controls the ground will probably go east soon and I can readily keep in touch with him, indeed he had me look over the ground before I went east, with the object of helping him place it, thus I have a string on it. They have *ore*, not much but it is good "Law-suit ore" and may lead to any kind of bodies.

I am looking into the future a few years on several of these "problems," but I have seen the neglect of just such foresight cost very many times the original purchase price of the ground, in litigation.

Butte and Park City are both giving us examples of this right now, and from my experience in these camps I wish to have your attention drawn to these matters early. That reminds me; I have a wire from Mr. F. Aug. Heinze asking me to come to Butte next
546 week to take part in one of his cases against the B. & M. B. & B. (written in ink after this). It would take 10 days or two weeks in all; I have talked the matter over with Mr. Holden,

and as you remember I told you that I must reserve these suits because of their having retained me so long ago, & my promise to serve. I have written and wired Mr. H. asking for exact dates and time limit, when these come will wire you. Mr. Holden says that he will gladly look after what little there will be doing here in that time, and he will perhaps wish to go to Butte also to study their mining methods and see some of their compressor plants and other machinery.

As much of this letter is of a nature which does not safely permit it being dictated I have written it myself, hence the looks of it!

As our friend Mr. Parker is close to the Highland Boy people better not confer with him about this matter?

Yours very truly, JAS. W. NEILL.

Filed in U. S. Circuit Court, District of Utah. Oct. 27, 1902. Jerrold R. Letcher, Clerk.

Q. I wish you would look at a paper which I hand you, Mr. Neill, and state whether or not you recognize it as a report that you made to your company in 1899 of these mines on the subject you have been speaking of?

A. Yes, that looks as if it was. Yes, that looks like my report.

Q. It is entitled "The Old Jordan and Galena Group of Mines." That includes this Old Jordan, Lot 64, and others, of course?

A. Yes.

Q. I want to read a passage from that which is disconnected with anything else, to see if it accords with your views to-day: "The great lodes of this district are carried by dolomitic limestone beds, which are enclosed by quartzite." Does that accord with your present view?

A. Yes.

Q. So, speaking of the Old Jordan, you intended just what you say, that the great lodes of the district are carried by dolomitic limestone beds, which are inclosed by quartzite?

A. In a general way.

Q. "These beds are all sedimentary and belong to the Upper Carboniferous formation, and have since their deposition been tilted to an angle of about 76, and subsequent to their tilting mineral-bearing solutions have altered the limestone, largely removed them and deposited them, depositing in their places the present minerals, pyrite, galena, quartz, blende and several copper minerals."

547 That has happened to this lode, has it?

A. Yes, sir.

Mr. DICKSON: I offer the portion which I read in evidence on page 2 (the same was marked Exhibit SS.—J. W. C.).

EXHIBIT "SS."

The great lodes of this district are carried by dolomitic limestone beds, which are enclosed by quartzite. These beds are all sedimentary and belong to the Upper Carboniferous formation and have, since their deposition, been tilted to an angle of about 26, and subsequent

to their tilting mineral bearing solutions have altered the limestones, largely removed them, depositing in their places the present minerals, pyrite, galena, quartz, blende and several copper minerals.

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Q. Can you point out on that map, Mr. Neill, where this Story claim is you referred to?

A. The Story claim is much to the east of this.

Q. On this same limestone belt?

A. Yes, sir.

Q. Have you made any careful examination to determine whether or not these main north and south fissures fault what you call the bedded vein?

A. Yes, sir.

Q. There are many fissures in that limestone belt which you call the bedded vein, are there not, running in many directions?

A. Not in many directions, but principally north and south—northerly and southerly.

Q. Many minor fissures?

A. Cracks and crevices.

Q. Running in various directions?

A. Yes, sir.

Q. How far east of the Old Jordan did you examine this limestone belt that you speak of in the Old Telegraph and Jordan? How many feet east of the Old Jordan did your examination go?

A. I could not say the exact distance.

Q. To the Wasatch mining claim?

A. Over the hill to the Dalton & Lark and the Brooklyn.

Q. That is still away beyond?

A. That is still way beyond; yes, sir.

Q. Now I call your attention to the eighty-foot map. I will ask you if it be not true that the easterly twenty-two hundred feet at least of the workings on the ore bodies displayed on Exhibit BB do not fail to disclose any north and south fissure that enters either the ore lying under the hanging country of this lime belt, or into the underlying quarzite?

A. No, sir.

Q. Point us to one within the twenty-two hundred feet of the east end of this?

548 A. There is a fissure, the Giant Chief; of course that cut clear through.

Q. I am pointing to these squares here of two hundred feet?

A. Perhaps, Judge, the distance will be that, that is, about twenty-two hundred feet (counting the squares).

Q. Now then, that region—do you know which is the most easterly north and south fissure that you have been able to trace into the overhanging and underlying country?

A. There are two.

Q. Which is the most easterly?

A. The most easterly with which I am familiar is one which passes through that raise.

Q. What raise is that?

A. That is a raise which is here middleways of the letter "E" in the words "Empire Tunnel."

Q. Very close to the letter "E"?

A. It is very close to that letter "E."

Q. You mean the first "E"?

A. Yes, sir, the first "E" in "Empire," and close to the mouth of 346, there is a fissure there that cuts off the ore body.

Q. Have you traced it into the underlying quartzite?

A. It comes back of these workings on it—

Q. Have you traced it into the quartzite?

A. Yes, sir, practically into the quartzite there.

Q. That is the most easterly one that you know anything about which cut the formations?

A. Yes, sir, the most easterly that there has been any tracing on.

Q. If as a matter of fact you found one of these north and south fissures had dislocated and faulted an ore body in what is called the bedded vein you would then be of the opinion that fissure at least was younger than the bedded vein?

A. Yes, sir.

Q. You spoke as you came through the west drift from its entrance of a point in the vicinity of where I now hold my pointer as being in the quartzite, did you not, and extended along there a distance of two hundred feet?

A. More or less; yes, sir.

Q. With the quartzite on the right as you went in and limestone on the left?

A. Yes, sir.

Q. In this drift you determined while you were there that that limestone, that quartzite you found there, was simply on a roll that went over and takes its normal dip beyond?

A. Yes; we went up in a raise.

Q. You went up in that Clark raise?

A. Yes, sir.

Q. South Clark raise, and up in the north Clark raise and up over the roll?

A. They do not quite—

Q. There was ore right over it?

549 A. Sufficient to establish the continuity of the ore.

Q. And as you went up one raise or down the other you had the quartzite footwall all the way, where you could see under your feet ore lying in contact with it, didn't you?

A. Yes, sir.

Q. Now, while you were in charge of the work, Mr. Neill, I will ask you if you had driven any of this portion of No. 1 level or branches which lie there to the north or south of the main level?

A. I did. I had charge of considerable of this work, judge, that is marked here "Coolidge West." I cannot say just how fair.

Q. Do you remember this working marked "Coolidge Crosscut and Raise"?

A. Yes, sir. That went up over the quartzite on the roll and down on the other side on the quartzite.

Q. It raises?
A. Yes, sir.
Q. Were you up this No. 1 raise?
A. No, I don't know that raise.

Redirect examination.

By Mr. HILES:

Q. Mr. Neill, these letters which you wrote to your principal in Boston were in the nature of confidential communications—business communications—concerning the purchase of that ground, which was in contemplation at that time?
A. I was asked for my opinion as to whether we should purchase it or not.
Q. I will ask you, Mr. Neill, whether you were brought here by subpoena?
A. I was subpoenaed to appear in court.
Q. I will ask you whether counsel for the defendants had any opportunity or did examine you before you came here upon the stand?
A. For the defendants?
Q. Yes, counsel for the defendant Colonel Wall?
A. No, sir.
Mr. DICKSON: Nor for the plaintiff either?
A. No, sir.
Q. Now counsel has asked you about how far you have traced the lime from the east, and you have stated as far as you know.
A. Why, I have been in the mines all through that section—all through from the Antelope on the east to the Highland Boy on the west in every prominent vein.
Q. It is a geological fact, Mr. Neill, that that belt beyond extends indefinitely around the world?
A. Hardly that.
Q. It may extend indefinitely for a very considerable distance?
A. Yes, sir.

550 ENOS A. WALL, a witness produced by the defendant on sur-rebuttal, and having already been sworn, on oath, testified:

Direct examination.

By Mr. HILES:

Q. Col. Wall, Mr. Jassen has testified to certain tracings which he has made upon those sketches or cross sections. I will ask you if you have also made tracings upon them?
A. I have placed on them the various colored lines attempting to represent the position of the rocks, the limestone and quartzite rocks, their relative position and the extent explored by the workings which have been testified to here on this section.
Q. What is the section which that represents?
A. I would like to look at the maps for a moment.
Q. This is the Rip Van Winkle and the Jackson incline.
A. The section passes through what is called the Rip Van Winkle

incline the Jackson incline and the winze or upraise connecting the Jackson incline with what is known as the Rip Van Winkle cross cut from No. 1, west, the tunnel of the United States Company upon this line, looking northwest.

Q. Well, you say you have made these other tracings and they purport to be representations of the different rocks and strata out there on that cross section?

A. Precisely.

Q. Now you may proceed—something has been said here with reference to a roll in the quartzite. Now go on and explain what the fact is according to your understanding of the situation?

A. First may I state as to how I determined this represents the true position of the rocks down to this point. First quartzite, and then about 290 feet of limestone which was determined by actual survey to be the thickness of the overlying limestone called the Jordan limestone, about 120 feet of quartzite, about 150 feet of limestone upon the section down to the west through where the Ashland fissure would cross the hill. The hill is lower here so that some of that overlying limestone is gone so that it does not show, but this is about 150 feet thick as shown here. The dip is determined by the Rip Van Winkle incline which is indicated near the contact and is upon the dip of the strata—I believe it is agreed to by all the witnesses on both sides. The Jackson incline which follows approximately the dip of the strata dipping down to the bottom, or down to the point where it is timbered. The cross cut from No. 1 West drift which is represented by a square in black in the end of this section, or rather by a square of black at the end of the cross cut, shows the bedding structure in its normal position dipping to the north. This section is as nearly as possible I think a direct cross section with reference to the dip of the beds as correctly placed and it is agreed by Mr. Palmer and our witnesses that the bedding is perfectly visible from that cross cut all the way across. Also a cross cut on the Rip Van Winkle fissure 80 feet below at the end of a drift, from Emma West drift, in which the beddings are as said by Mr. Palmer. I have not examined them. Mr. Palmer said it was so found to the east there, finding what is observable in the Kempton and Neptune tunnel all the way through upon a level, the bedding being distinct and normal throughout, from the position of the bedding at the connection, at the termination of the Sampson stope, which has been connected by this upraise and by points along to the west where the beds have been determined. I assume that the dip of the bed is uniform and as shown here without anything more than a slight variation. The West drift at the point from which this little cross cut leads off is about 30 or 40 feet from a drift and upraise through the Clark or some one of these upraises on a fissure dipping as is indicated by the red line, the foot wall of which is shown here. From the statement of the plaintiffs witnesses and also of our own, I have assumed that this extends up for a hundred feet, that the vein pitched down to the level of the Emma West drift, which would give a section of something like 180. This is said to be the foot wall of the quartzite, the foot wall of the Jordan limestone, and that being so

551

necessarily implies that the structure should be parallel to the surface in both of these fissures. But in point of fact the dip as shown by these various points is practically the same as that on the other side, with the limestone beds jutting against the beds of quartzite from which it is evident that a displacement or fault has occurred upon that line and that it is not upon the bedding planes of the quartzite there.

At the point called the top of the roll is probably the true bedding planes. This would be the true bedding planes; that is a line produced upon this lode within the fissure—that is in part filled with ore. That not only extends so far as described by the witnesses at 180 feet but must extend entirely through the hill in order that the dislocation might take place. But assuming the fact to be established that some of the strata which continues down to this point carries with it the necessary conclusion that all other beds in the series must to that extent be found parallel.

Q. Must be what?

A. Must be found to be parallel, must be found parallel with this line and that line, to be carried through that way. Now, therefore, the balance of the layers in the lime belt would be found parallel to the one that had been followed through. The quartzite is all barren through to its junction in this and other places, the result of
552 which is the joining of the ends of that series which dip in the opposite direction, which if it had been upon the bedding planes of the same quartzite then it necessitates a structure of the quartzite parallel to its surface lines in contact with the limestone which has carried the bedding planes in the lower quartzite to this body here. Also that the lime should be stratified parallel for at least the length of the point of contact, which as I say is about 180 feet. I have carried that section out past the east end of the limestone, which must be taken care of because it is here in all the workings, with a face opposite that which is exposed; then 120 feet of quartzite, and then the balance of the limestone which placed in that position will reach above the surface, and if there was a flexure as described, in neither case perfectly straight limestone beds would be above the surface and having a dip in the opposite direction to that which is found to be true by every witness. Now in order that the footwall of quartzite shall bend back and complete the fold that has been illustrated, in plff's. cross sections it is necessary that it should curve in the shortest possible line, and coming back to the surface the very shortest possible radius upon which such a curve could be made in is 300 feet; and that would bring the whole quartzite strata some two or three hundred feet across the gulch from where the top of it is now. It would bring the top of the limestone below the foot wall of the quartzite; it would bring the upper quartzite out in the midst of this lime bed with lime up above to the surface. And then to conform to this point which I take it is the true bedding of the quartzite, the other end must curve up the same way, which would carry three fourths of the limestone and all of the quartzite in the other beds up in the air on such curves as I have assumed here, which is the shortest possible to allow for the thickness of the lime from a central point of axis.

Q. Now what is the fact as to there being a fault in the quartzite bed extending the length of that?

A. This quartzite at the junction of the limestone is clearly and unmistakably one side of the fault, an early fault, a fault taking place before mineralization, because on this side is quite a strong fissure mineralized, the ores of which carry into the big stope and mingle with them, showing that the deposition was at the same time; that is to say, this plane was once there even with that. Taking the section as it is given that plane should be raised up to this point beyond this and back to that point. The face of this rock shows abrasion, as a movement such as would result and always does result from a slipping of the rocks however flat one upon the other. The
553 Commercial, I have simply placed these lines at a suggestion which I believe to be an extension of the whole thing, that whilst this roll undoubtedly exists as suggested, there would also be from that point to this point the foot wall limestone projecting above this. the No. 1 tunnel drift to be less than a hundred feet lower than the quartzite, which appears in the hill in the form of the work in the Commercial mine. It had been assumed that the Commercial mine had its foot wall upon this upper quartzite; that quartzite is 120 feet—it is 140 or 150, but assuming 120 there is only room left from these drifts in quartzite at the level of No. 1 west drift, and which is carried up 90 feet on that slope leaving only thirty or forty feet left in which to place not only the quartzite but the three hundred feet of limestone that the Jordan vein, as it is called, may get under the Commercial. Hence I assume that this is a continuation of the same quartzite that the Commercial has and a continuation of the lime in the Jordan mine. At the point in the gulch as shown on the surface map, west——

Mr. DICKSON: I think this one shows the gulch that you are speaking of (T).

A. Yes; it is on this gulch here, which runs between the Commercial and Jordan hill. At a point from the mouth of the lower Mill tunnel up to a point within thirty feet of the top of the quartzite and upon which raise the Commercial mine quartzite is found at intervals all the way along the road, leaving only the distance of 30 feet between the quartzite, the Jordan quartzite and the Commercial.

Q. Look at this photograph and see if you can illustrate upon it that matter?

A. The road that I refer to is to the west of this dump in this low ground here, it shows points along on this road; it curves there at the dump which is at the corner of one of these claims perhaps up to this point, and up around the curve in the road which leads up to the corner to a point within thirty feet vertically of the Commercial, entrance to the Commercial tunnel which is at or immediately over the quartzite—the quartzite is a little below that—quartzite is found all the way down to the entrance of the No. 1 tunnel; also in the face of the cut which the company's offices and other houses are on cut into the quartzite.

Q. How far down on this photograph does it extend?

A. Entirely down to where the building stands and clear across.

Q. Clear across the gulch?

A. Yes; on the other side of the gulch it is quartzite also but it would be lower beds. In all the workings beneath this I fail
554 to find any limestone vein in any of them, in the No. 2 tunnel or anywhere upon the surface, the only suggestion of limestone is found in some irregular patches of chert as called by a good many which may and may not be a product of limestone and probably may be in place or may not, but a mixture of chert is found at the surface near the corner of the Old Jordan claim in some of those caves and also beneath the surface, but no limestone, no unaltered limestone, nothing resembling limestone or suggesting limestone more than the specimens that have been brought here and those generally have been selected with very great care and with equal care some specimens undoubtedly of quartzite have been selected from the same mass and are also presented here. (Witness goes to section Exhibit 33.)

WITNESS: This is a sketch or outline of a sketch and the workings cut through by it are placed by Mr. Jessen, and represent upon the picture a point below the dump of No. 2 tunnel and a line across to the Commercial tunnel buildings, crossing the gulch and crossing the points at which the quartzite is exposed in the gulch, and from which samples were taken; and from examination along that line of every thing upon the surface in various holes, beneath and back for several hundred feet I have been unable to find any limestone or anything more resembling limestone than the pieces which have been brought here. There is a sort of hog-back west of the Commercial which runs east and west which is beyond question the center of that section of the Jordan Gulch. It runs parallel to the gulch; it is separated from the main body, which is the foot wall of the Commercial lode, or Commercial limestone. These stopes however 30 feet below the foot wall of the Commercial limestone, have been proved by several hundred feet in depth by workings.

Q. Do you assert then by that explanation that the lime here in the Kempton has been cut off by quartzite from the lime that is to the east in the Old Jordan?

A. Yes, sir. And in the junction at any point of the rocks on either side of this fissure is quartzite and limestone just butting together as it is suggested here.

Q. Anything further?

A. I wanted to refer to the Telegraph mine just a moment.

Q. On the map?

A. Yes. (Referring to Exhibit BB.) From my reading of the position of these veins, the Old telegraph lode is not inclosed in the same rocks at all as the Jordan. It is in an underlying body at least five or six hundred feet lower than that of the Jordan and Kempton. This is a view taken about 2000 feet northeasterly from the boarding house as represented here, and from a point which the road
555 leading up to the mines on Jordan Hill can be seen. These are the mines of Jordan Hill on the white dump up there, and the general line of the Jordan workings down there. The rocks there as has been shown by all of the sketches that have been produced

here start on quartzite across the gulch and upon a dip of about parallel to the surface of these workings all the way down, showing the top of that bed is on a slope that would carry it if continued above the surface of the hill and parallel to the hill. This hill is quartzite with a few points of changed limestone, but of a different character. The Telegraph mine is situated, that is the mine, that portion of it which has been discussed, in which the Giant Chief and other fissures have been mentioned, is worked from tunnel and workings which are driven in a direction parallel to the surface of this hill. This hill is stratified as the surface shows. Here is a raise upon a quartzite foundation with the rocks as shown here passing through the hill. The continuation of these beds are shown along the top of the hill, so that the tunnels have passed in under and with the bedding of the overlying quartzite several hundred feet. The mine is developed by a tunnel from the north in this direction, which cuts through this overlying rock, dipping over this way. It shows the condition at a glance that it is impossible that this vein should come over here. This is the condition of the rocks off here down the road and on down to a mine called the Storey some thousand or fifteen hundred further east than the end of the Jordan mine. Similar limestones are found down below with the dip precisely as above on the face of the hill and a strike in the direction of the exposure, and thence five or six hundred feet up in the bed above that in which this is.

Q. I will ask you whether the hanging wall of the Telegraph is not the foot wall of the Old Jordan?

A. That is true. There is a mountain between. It is five or six hundred feet in thickness it has been stated; that from the Jordan Hill the Telegraph could be seen. But it can be seen at a glance that it would be impossible with a hill six or seven hundred feet high intervening between the line that reaches over Jordan hill in this direction, it is impossible to see the Jordan from any place off in this direction where a view could be taken.

Q. I will ask you what this map is?

A. This is a map of the District furnished by the United States Surveyor General's office.

Q. Upon it is laid down what?

A. All patented or surveyed claims, all claims upon which a report of surveys have been returned up to date at least all which were compiled two or three weeks ago.

556 Q. It is a compilation of all the mining claims in that district?

A. Yes, sir; and furnished by the Surveyor General's office. A glance will show that nearly all the claims, especially the old narrow claims are located this way; this is the Jordan this red block. The Stewart is marked over there in red with various claims running across this way. The Commercial is somewhere up the hill here. Now it has been explained that the limestone continues in the Jordan to a point some distance beyond the Ashland and these other claims, and then was faulted over some eight hundred feet to the northeast and formed the basis of the claim called the Stewart. The distance across by this map is 1800 feet. The rocks upon which the claims

are located on this formation are chiefly quartzite, that is the base is quartzite, with limestone overlying on to the northwest and west up to the top of the mountain, at least two miles and which shows no evidence of any disturbance in that territory, and there has been no disturbance. It is a part of the mountain range which extends back of the Telegraph, which is shown in the picture, and not out of place at all. From the Stewart mine across as I put this ruler and in this direction north and east and west, is a belt of porphyry, as stated by Mr. Holden as being a mile and a half or a mile and three quarters in width. This distance is about 3000 feet which divides the Stewart from the Highland Boy, situated over here. The Commercial mine is upon the hill to the east and the workings extend very nearly over to the Stewart workings the surface of which I examined for the purpose of ascertaining whether the stratified rocks extend on continuously over to the Commercial. The Stewart and Commercial are unquestionably in the same strata. The whole country to the northwest of the Stewart and from a line perhaps a thousand feet in the direction of the Jordan up to the Stewart and then west is all porphyry. The country out in this direction up to the Telegraph within a few hundred feet of the Telegraph and north down the Bingham Canyon is at least for a mile and half all porphyry. The porphyry has not only overflowed, but has carried portions of the country up with it. As shown by the contact of the quartzite and limestone on the north side jutting against the porphyry as our section shows, showing that the porphyry has come through and carried up and away the overlying formation, while on the south part it has flowed up to some extent over the surface. There are two tunnels passing into the Stewart mine, one starting within a few feet of the hanging wall side of the ore body and not more than 40 feet under the old workings with porphyry extending across it and for several hundred feet to the south all porphyry. Another one started four or
557 five hundred feet lower and extended in a northerly direction towards the Commercial, the whole country being porphyry; showing that the Stewart itself is simply a slab like piece of rock, like a block of ice floated out upon the top of the porphyry. To have produced such a fault as has been described here by the other side it would have been necessary to tear or cut out a section of the rock out of the solid mountain, and float it out on a sea of porphyry.

Cross-examination.

By Mr. DICKSON:

Q. You know all about the mines called the Stewart in that district?

A. One is the Stewart, the other is the Stewart No. 1 and the Stewart No. 2.

Q. The Stewart No. 1 lies right here close—I don't know which side of it—but near the Saratoga?

A. The claim bounded in red I have taken to be the Stewart that is referred to; there may be another one.

Q. The Stewart No. 1 as the record shows, don't you know that that lies about where I hold my pointer?

A. I do not but it is a patented claim and certainly has its place upon the map and if the map shows it there, it must be there some place.

Q. No; it don't show it at all?

A. Then perhaps——

Q. You knew that it conflicted with the Saratoga, didn't you?

A. I don't know anything about its relations to other claims. I think it would be shown upon the map; but I think however, it is correctly represented there; there is a Stewart No. 2 at the end of it as marked.

Q. You know the Stewart No. 1 mining company don't you?

A. No.

Q. Owned or controlled by Gilmer and Salisbury?

A. I knew the owners of the Stewart mine, the men who were the former owners.

Q. There is a group of claims called the Stewart No. 1 including the Washington and others?

A. Well, that may be true; I don't know. The ore however, I always understood to be upon the Stewart claim, sometimes called No. 1; I don't know whether they are located upon the map right or not, and another one which numbered No. 2 there which I notice on the map.

Q. I thought probably you would remember some of the claims, the Washington and Saratoga?

A. No; I don't remember anything of those claims never having examined those mines at all.

558 Q. The limestone that you found in what is marked as the Stewart you think was carried into that district you think, that it was carried out there on a sea of porphyry so to speak?

A. No; I do not. I said to assume the fault to be such as you claim and describe, would assume that a section of the lime was faulted from a part of the mountains in one district, and floated out on a sea or porphyry, because the rocks were all around and under it as shown by the various cuts. Here is the vein and limestone under the rocks and none of them——

Q. It is not unusual to have a country faulted for a distance of a thousand feet?

A. Not at all; but such faults are easily discoverable.

Q. And such a one we have on Exhibit 32, a fault which is very easily seen?

A. Very easily to be seen.

Q. So that any one in walking upon the surface vertically above the Kempton tunnel one could very easily see a sudden dropping over the country and where the limestone ceased and the quartzite would come in?

A. If the surface were exposed so as to see the rocks all the way. I intended to call attention to that before. There is the entrance to the tunnel, suggesting the course through there; the dip of the fault is in this shape. At the surface there is a dislocation there of about

40 feet; there is quartzite in that tunnel, and here is quartzite below the dislocation about 40 feet, which I presume would account for the dislocation referred to in the Galena fissure. However, that does not take in a photograph very well, but it will be seen by an examination closely. There is a cliff of rock which projects out from the surface and suddenly terminates at this point; upon the opposite side are other workings commencing there up the hill and passing over here in this direction. These rocks on that side are the counterpart of this quartzite below as I read it: An examination of this closely will show these rocks terminate below while the hill goes on. This juts at 10, 15 and 20 feet on this side and all the rocks on this side here, which would be one of the evidences which are easily discoverable upon the surface, otherwise they would not be noticed, because the surface is otherwise covered with debris and undergrowth.

Q. When you have an outcropping of any vein it approached much further above the surface in some places than others owing to the silicious character of the outcrop in some places than others?

A. Oh, yes.

Q. It is not disintegrated so easily?

A. Certainly.

Q. Now let me call your attention to one or two points on Exhibit T. You see the workings around about station S 21 and 22
559 on the surface, and S 20; that is east of your fault; your fault goes through here on the Jackson incline?

A. Oh, no; I will show you the place.

Q. Has the Jackson incline been projected on that Exhibit 32?

A. On that plane, but that plane crosses the fault; this is No. 1 West; that is the direction.

Q. Where was this section taken; through what plane?

A. The section is taken through the Jackson incline.

Q. And about parallel to it?

A. Practically through it as shown by the map.

Q. Well, there is a point where the fault plane is taken and that is the direction of the plane?

A. Yes, sir.

Q. The section is taken out not in this direction but way down here?

A. Down through here.

Q. Through what is marked on Exhibit T as the Delia B tunnel; and that would be across the fault plane?

A. Yes, sir.

Q. These workings of course are not continuous and there are angles. This is the No. 1 West tunnel.

A. I could not tell where that would be.

Q. You understand of course Col. Wall having two diverging lines projected on the same plane that it would be a very difficult matter to make anything like a correct projection upon the plane you have got to approach at right angles to your plane always?

A. No, sir.

Q. Do you know of any other way of projecting and not destroying the matter, unless you project at right angles to the plane; is not that the only reliable way?

A. Perhaps that would be a good custom where the facts are known. This is done upon the only line and practically at right angles too—the only line on which the beds have been followed from the surface down to the intersection of the fault, so as to make sure of no interruption.

Q. About what was the course of the fissure you intended to represent?

A. Very nearly the course of the No. 1 West.

Q. That fissure of course cuts the country or it could not have faulted the rocks?

A. Of course, or it could not have faulted it.

Q. That does not approach the parallelism of any of these other north and south fissures?

A. No, sir.

Q. Cutting them at almost right angles?

A. Almost at right angles? The fissure I take as the plaintiffs witnesses have described it, except a small section which I have seen myself which is that portion shown in No. 1 tunnel from the head of the upraise in the Emma stope to a certain point that is intercepted by their drift.

560 Q. Have you traced that into the underlying and overlying country?

A. I have traced it along on the level.

Q. Have you traced it into the underlying quartzite?

A. I have not below the level of the tunnel.

Q. Have you upon the surface?

A. I took the statement of your witnesses to that fact; they have placed it seven or eight hundred feet along down to the level of the Emma stope and up to the top of the Clark raises.

Q. Did any of your witnesses testify that this fissure that you claim to have found in Delia B tunnel extended into the foot wall of quartzite or the hanging wall of porphyry or quartzite?

A. They all testified that it was conformable to the quartzite, bedding of the quartzite, which is the same quartzite which was put there.

Q. It might wholly be within the lime and yet conformable to the quartzite?

A. Yes, sir.

Q. Did any witness testify that that fissure that you are speaking of extended into what we call the foot wall or the hanging wall of the country?

A. Oh, not at all; if so it could not be and would not be a fault fissure; it simply occupies the space between the quartzite and the limestone, which is a faulting fissure.

Q. Now right through where you have your fault fissure in the Della B, tunnel at the surface?

A. If you will use one of the underground maps because I don't know whether that is the line or not; if that be a section of No. 1 tunnel why then I am willing to project upon it.

Q. Use our map which has No. 1 tunnel upon it?

A. I won't be sure where that is.

Q. And then we will quit in a few questions?
A. Here is No. 1 tunnel.
Q. Starting here and running in that direction?
A. Yes, sir.
Q. Here is the Delia B tunnel?
A. That I don't know anything about.
Q. This is the one you know?
A. That is the one.
Q. It as on that line that you claim the fault?
A. Yes; in to the intersection of some upraise; I don't know exactly where.
Q. Do you understand that all of the ore bodies displayed upon this Exhibit S, east of the No. 1 West drift as you go in from its mouth for a distance of four or five hundred feet, are all in quartzite, all these ore bodies in quartzite or lie east of the quartzite?
A. All east of the tunnel, that the tunnel passes through.
561 Q. Here you have the line of fault?
A. Yes, sir.
Q. Right through this drift, do you mean to say that all the ores lie to the east of that here in quartzite?
A. Oh, no.
Q. They are all in lime are they not?
A. They are in lime for the distance of two or three hundred feet as far as can be seen from that tunnel on either side.
Q. Was the throw on this line of this West drift?
A. Not quite.
Q. It was further east was it?
A. It was further west.
Q. Further west than that?
A. Yes, sir.
Q. About how much further west did you find the fault?
A. I don't know.
Q. Give an approximation?
A. I prefer to be accurate because the fissure has been described accurately for 700 or 800 feet and I am not guessing at it at all.
Q. I was only asking for the distance approximately? If you prefer you can scale it?
A. I do not prefer to scale it; I prefer to get at the facts. The fault fissure is intersected at an upraise which I understand to be a raise from the Big Emma stope and that would be this; from that point westerly the tunnel follows the fissure which is the fault fissure and which is a mineralized fissure, the right hand side being quartzite and the other side being limestone, the ends jutting together as shown in the sketch. At the point at which the No. 1 West drift deflects to the south the fissure goes straight on and is reached by the various cross-cuts which have been described by all the witnesses, upon which are located the Coolidge, the Clark and other stopes, so that it has been carried on that line, that is the course of it, which can be determined, something like that.
Q. The way I hold my ruler?
A. Yes. This end I should think is above the mouth of the tun-

nel—I think it would be south of the mouth of the tunnel which suggests that that end is further out and that further in; it went entirely straight and continuous.

Q. The Delia B. is continuous in lime from the mouth to the end?

A. I have not seen it but if it be the same near the surface it would be in limestone, because there is a little patch of the limestone when you get four or five hundred feet in; it ought to be in quartzite here for it is east of the throw.

Q. As a matter of fact it is in limestone all the way?

A. I don't know; I never examined it.

Q. Were you ever in the Mill tunnel?

A. Yes, sir.

Q. Is not that in limestone?

562 A. No, sir; not a foot. I have never been able to find a pound or a foot of quartzite in there anywhere.

Q. Quartzite?

A. No; I mean limestone.

Q. Is that Utah tunnel in the quartzite too?

A. Yes, sir.

Q. Is it not timbered and lagged up?

A. These works I simply passed through hurriedly into the West drift and into the various other drifts spoken of here, such as that; and so far as I went all of the workings were in quartzite; I took no note of any particular point.

Q. Does not the Utah tunnel from station 9 through to 282—well, from station 47, as you follow easterly along in the tunnel until you get to station 282, aren't you in limestone every inch of the way where you do not have ore?

A. I never examined that tunnel in so far as that. I examined the entrance and in fact four or five hundred feet; the tunnel run down here somewhere, I suppose further west, and at the entrance that is all quartzite. It goes through a quartzite bluff which is the main thing there and passes through quartzite into a bed of ore and within a short distance strikes the same quartzite again and continues up on that quartzite as it was originally run. That was the subject of some controversy heretofore; that that was the Old Utah tunnel upon which that—

Q. That part of it here?

A. I don't know anything about that part of it. I did find limestone way back in there; it is about 1800 feet as I think from the mouth.

Q. Is it not a fact that there is a space between the quartzite hanging and a foot quartzite where there is nothing at all but ore, the original rock between having all been removed?

A. No; there is a space from the foot wall of quartzite through a large body of ore and back to the foot wall of quartzite again all ore and there are several of those places, and those points that have been described as running from the foot wall for instance of the Galena, are of the same character. There is no hanging wall at all over the No. 1 tunnel. It is probably not more than 20 feet from the surface, or forty feet, for the distance of several hundred feet.

Q. Was not there ore near the east end, within a few hundred feet, two hundred feet of the east end of the Jordan, ore continuously from the quartzite hanging to the quartzite foot, so that there was none of the original rock left at all; you can say yes or no to that and we will get on?

A. If the section would be crossed by the Mill tunnel then I am able to answer; I have only examined as shown by the No. 2 tunnel.

That enters in quartzite and passes through two large bodies
563 of ore with intervening quartzite and comes into the quartzite again on the other side but it is the same quartzite foot wall, foot wall quartzite all the time from the end of that drift up to the surface at a distance of only 30 or 40 feet. So that the foot wall——

Q. Do you mean this tunnel?

A. I mean the No. 1 tunnel. You mean the one way out here, do you mean that?

Q. I am talking about the east end?

A. Then I don't know unless it be entered through this tunnel.

Q. Did you endeavor to point out to your witnesses this distinct faulting of 180 feet noticeable on the surface and underground?

A. Oh, yes; for more than 480 feet.

Q. You undertook to point that out to the witnesses which you called here?

A. On the ground to some of them, yes, sir; and I think they did not require very much explanation to understand it.

Q. Have you been in the workings upon the east end of the Old Jordan and if so how far east?

people.

A. No, sir; except the old works which were run by the Niagara

Q. How long since you have been in the workings lying 2400 feet east of this Jordan claim?

A. I was in the Utah tunnel about three or four weeks ago.

Q. You understand my question.

A. About three or four weeks ago.

Q. How far easterly have you examined the workings of the Utah tunnel—From the easterly end of the Jordan how far is that how many hundred feet?

A. I guess it would be four or five hundred feet.

Q. That is as far as your examination has gone?

A. Yes, sir.

Q. You have not been to the Old Telegraph and Niagara and other claims way on to the east 2000 feet?

A. I examined the Telegraph two or three years ago, one of the tunnels that was driven in at the point to which the photograph was directed some four or five hundred feet, in to its connection with the Giant Chief fissure; I went out there for the purpose of examining the Giant Chief fissure with reference to some disagreement of some kind.

Q. You have seen the workings that have been included in this 80 feet of work, these workings at the easterly end?

A. Only at the surface, except I examined some workings in the

Old Telegraph three years ago; those which were connected with the Giant Chief.

Q. There are workings along here for 1800 or 2000 feet easterly of where your examination stopped?

564 A. That I don't know, but there are surface exposures almost continuously easterly.

Q. Do you say that these ore bodies extending to the east as shown on the 80 foot map are not in limestone?

A. No; I don't say that but I say they are not in the same geological horizon and——

Q. But you think they lie some six hundred feet below?

A. Below, yes.

Q. In a different geological horizon?

A. Yes; below: It requires only a glance at the photograph to be certain of that and from an examination of the hill.

Q. Do you say that you cannot with an interruption of 400 feet at the outside from the most easterly workings follow on merchantable ore for over 5000 feet every foot of the way?

A. If you mean in the direction to the east, I don't know because I have not examined those.

Q. I mean from here west?

A. But if it is west towards the Jordan I would know and I say no.

Q. That is my question?

A. I say there can be no continuity in any direction.

Q. Are you able to say that starting at the westerly workings in ore as shown on the 80 foot map, can't you travel easterly therefrom for a distance of over 5500 feet on continuous shipping ore with the exception of an intervening block of about 400 feet?

A. If this includes the connection of the Telegraph workings, Jordan and telegraph workings with what you used to call the Jordan lode I say it is impossible, if you mean 400 feet across overlying strata from the Telegraph up into the upper lime then it might be possible.

Q. No; I mean in the same limestone belt?

A. If you mean in a line of the direction of the strike of the bed from the Jordan then there are 2400 feet intervening portrayed in which there is no limestone or quartz or anything else as proven by the cross cut, from the Niagara tunnel and which shows that there is none of those rocks there.

Q. If you start from the most easterly workings on that level can you not follow continuously in merchantable ore all the way as far as that blue print extends?

A. Not having examined it it would be impossible to say but I say that it is impossible that such a thing could exist, but not having examined the ground, I cannot say.

Q. Why would you say Col. Wall that it would be impossible that such a thing could exist?

A. Because there are intervals in the workings through there.

Q. I did not mean on any one level?

565 A. Or on any one lode either.

Q. On continuous ore as you go down or up from one working to another, can't you travel on continuous ore merchantable ore?

A. If I was asked to what portion I say I don't know; if you ask me that question now and will indicate what portion of the country you refer to then I can give an opinion as to whether such a thing is possible or not; I do not believe there is anything like that.

Q. Starting from the place marked East drift on this same level also in blue, starting between stations 187 and 188 can you not travel in ore continuously for 250 or three hundred feet in a westerly direction upon merchantable ore all the way?

A. Is this the ground that is called the Spanish?

Q. Yes; there is the Spanish claim?

A. That is off the line.

Q. I mean on one level?

A. It is likely to.

Q. And then again where you find stations 220 to the words "Storey tunnel" haven't you ore again?

A. I don't know; I haven't access to that mine and don't know; there may be ore there.

Q. Starting at the Davidson tunnel, say within 60 feet of the mouth of the Davidson tunnel, can you not travel in continuous unbroken merchantable ore every foot of the way to where you united with the Sampson stope?

A. No.

Q. Have you been through there?

A. I have been through 900 feet to the nearest approach.

Q. When?

A. A week ago.

Q. Where, on what level?

A. From the No. 1 level over to the intersection of the——

Q. I am not confining you to that particular line?

A. The nearest point, the first 900 feet is limestone——

Q. I understand that. I am confining you to No. one level; I know there is a stretch of that level that is through limestone but I say going through irregular workings from a point within 60 feet or thereabouts, north of the Davidson tunnel, going down and up, one level to another through raises and winzes, from one level to another along the various workings, can you not travel every inch of the way on merchantable ore until you strike the Sampson ore body?

A. Just allow me a word of explanation and I will answer the question. I understand this to include a section across from the Old Jordan across near the Telegraph and across the Spanish.

Q. You have gotten beyond that?

A. But you did start down here. If it would be upon that line then whilst there may be large ore bodies, there is not, there cannot be found anywhere in that whole country upon that whole
566 line of 2000 feet or whatever it may be, a connected stretch of 100 or 150 feet of limestone having any relation to this bed. The surface of this whole line is beneath the upper surface of the foot wall of quartzite which carries the Jordan limestone, and going across this country across certain intervening fissures there is no limestone in that direction at all, unless it be in isolated patches, there is not a connected piece a hundred feet long and I do not believe they

can produce a pound in the whole hundred feet of unaltered limestone. Now as to what ore there may be, I don't know; I have not examined it, but the condition of the surface and the fact of the non-existence of the limestone is evidence to any one passing along through there that there is none there and it is clearly evident that the whole hill is way beneath, as shown by the cuts and exposures in the lower quartzite, some quite a good many feet lower than the upper portion which forms the foot wall of the great lode.

Q. You are not answering my question?

A. I am trying to answer as to the fact however.

Q. I am not asking you now about limestone; in my last question I did not ask you at all in reference to the territory that you pointed to, but I say starting here within 60 feet of the mouth of the Davidson tunnel, and going through the various workings, irregular workings, can you not follow west in ore, merchantable ore every foot of the way until you connect with the Sampson stopes; that is my question?

A. No.

Q. How do you know?

A. I know because the last section of 800 or 900 feet, unless you have got some secret opening beneath, is absolutely in barren limestone.

Q. And that six or eight hundred feet you refer to is in the main No. 1 level, isn't it?

A. Yes, sir, and not only that the same rocks appear at the surface and they are barren.

Q. Did you ever undertake to go down from that No. 1 level to the north end of the West drift?

A. I did not; no, sir; I did not.

Q. So you don't know whether you go down on that level in ore and then continue on in ore——

A. No; I believe you can because the witnesses have all said so; it is evident the fissure goes down there, the fault fissure, and goes on below.

Q. And then for 500 or 600 feet, or 400 or 500 feet of this 600 or 800 feet, that you speak of as barren limestone, as you walk along the level, you are only 15 feet over the Coolidge stope, the Coolidge stope being right at your feet?

A. I don't know; it may be.

567 Q. Did you ever go down there and examine it?

A. No; I had not access to it.

Q. Were you ever denied access to any place in this mine?

A. That is true, but I had no occasion to examine that; it did not connect with any of our workings.

(No redirect examination.)

Mr. Hiles: We rest.

And thereupon said defendants rested their case in sur-rebuttal.

And said plaintiff to further maintain the issues on its part in rebuttal of the sur-rebuttal, gave in evidence the following, that is to say:

SIDNEY W. TYLER, a witness produced by plaintiff, and having already been sworn herein, testified:

Direct examination.

By Mr. DICKSON:

Q. I call your attention to some samples of rock; one marked C, one marked D, one marked G and one marked [—] in red, and ask you what they are respectively?

A. The one marked C looks to me like surface altered porphyry, porphyry that has been at the surface of the ground and exposed to the atmosphere subjected to atmospherical influences a long time and been altered. D is a piece of quartzite. I will say the same of G. 5 is a piece of material that is found in the mine in great quantities, as I have described, in the eastern portion. It is the amorphous quartzite spoken of.

Mr. HILES: I have no cross examination.

Mr. DICKSON: We rest.

And the above and foregoing was all the evidence and proofs introduced by said parties on the trial of this suit.

Filed in U. S. Circuit Court, District of Utah. Nov. 19, 1902. Jerrold R. Letcher, Clerk.

Stipulation Re Exhibits.

And afterwards, and on to-wit, the 21st day of March, 1903, stipulation in writing was filed *in re* exhibits used upon the trial of this cause, which, being entitled in said court and cause, is in words and figures following, to-wit:

In the above entitled and numbered cause it is hereby stipulated and agreed by and between the solicitors and counsel for the
568 respective parties, that all exhibits used upon the trial of said cause and received and introduced in evidence, and the transcript of the testimony adduced upon the hearing of said cause certified by the stenographer taking the same, shall be filed with the clerk of said above entitled Court in said cause and when so filed as aforesaid the same shall have all the force and effect as though the same had been taken before the Master of said Court and by him certified to said Court, such filing with said Clerk as aforesaid shall be made as of the date of the taking of such testimony and introduction in evidence of such exhibits.

Dated M'ch 21st, 1903.

SUTHERLAND, VAN COTT & ALLISON,
DICKSON, ELLIS & ELLIS,
Solicitors for Complainant.
OGDEN HILES, *Solicitor for Defendants.*

Filed March 21, 1903. Jerrold R. Letcher, Clerk.

Order Re Filing Exhibits.

And afterwards, and on the 24th day of March, 1903, an order was made and entered in said cause, which, being entitled in said court and cause, is in words and figures following, to wit:

At this day comes W. H. Dickson, attorney for said plaintiff, and on his motion and pursuant to the stipulation of the parties hereto, it is Ordered that all exhibits used upon the trial of this cause and the transcript of the testimony taken herein certified by the stenographer taking the same shall be filed with the Clerk of this Court and be of the same force and effect as though taken by the Master of this Court, such filing to be as of the date of the taking of such testimony.

Final Decree.

And afterwards, and on the 23rd day of March, 1903, a Decree was made by the Court and entered of record in this cause, which, being entitled in this Court and Cause, is in words and figures following, to-wit:

This cause came on to be heard at the May Term, was argued by Counsel and taken under advisement by the Court, and thereupon, upon consideration thereof,

It is Ordered, Adjudged and Decreed, by the Court,

First, That the motion made by the defendant, at the conclusion of the plaintiff's testimony in chief, to dismiss the Bill of
569 Complaint herein or retaining the Bill to require the plaintiff to commence an action at law to determine the ownership to the ores or veins in dispute, be and the same is hereby overruled and denied.

Second. It is further Ordered, Adjudged and Decreed by the Court, upon consideration of the pleadings and all of the evidence taken and given upon the hearing of said cause, that the Bill of Complaint herein be and the same is hereby dismissed at plaintiff's cost.

JOHN A. RINER, *Judge.*

Filed March 23, 1903. Jerrold R. Letcher, Clerk.

Order Re Injunction.

And afterwards, and on the 25th day of March, 1903, an order was made continuing and modifying injunction and undertaking thereon, which, being entitled in said court and cause, is in words and figures following, to-wit:

In this cause, the United States Mining Company having prayed an appeal from the final decree herein dismissing its bill of complaint, and the Court being willing that such appeal be allowed, and the said United States Mining Company further praying and moving this Court that notwithstanding the entering of such final decree dismissing its bill of complaint, the Court continue the in-

junction herein during the pendency of the appeal, and the Court being of the opinion that the *status quo* of the property pending such appeal be maintained, doth order that upon the said United States Mining Company filing in the office of the Clerk of this Court a good and sufficient bond in the penal sum of Fifty thousand dollars, conditioned to the effect that it will answer to the said defendants such sum or sums, not exceeding the penalty thereof, as said defendants, or either of them, may sustain by the continuance of said injunction, not exceeding said sum of $50,000, and said bond and the sufficiency of the sureties thereof to be approved by this Court, and doth order that all injunctions heretofore issued in this cause be and the same are hereby continued in full force and effect pending such appeal; provided, however, that the same be modified as follows: That the said defendants, and each of them, shall have the right to remove and market under the direction and control of the Commissioner hereinafter named, all ores heretofore mined from the property in dispute in this action, which said ore is now situated in the defendants' bins on the premises, and the net proceeds of the sales of such ores shall be deposited with the Registry of this Court to safely hold and keep the said moneys until the further order of the Court herein, and that the said defendants, and each of them,
570 shall have the right, under the direction and control of Charles Read, hereby appointed by the Court a Commissioner for that purpose, to do any and all development work in the said property, and to remove and market such ore as may be mined in the doing of such development work only, and to sell the same and the net proceeds thereof to be deposited with said Registry as aforesaid to await the further order of the Court herein. By net proceeds is meant the sum realized from the sale of such ores after deducting therefrom the necessary and reasonable costs of extracting, transporting, reduction and marketing thereof. This order shall not be construed as permitting ore to be stoped.

Dated March 5th, 1903.

JOHN A. RINER, *Judge.*

Filed March 25, 1903. Jerrold R. Letcher, Clerk.

And afterwards, and on the 25th day of March, 1903, Plaintiff filed its petition for appeal from the judgment herein, which, being entitled in said court and cause, is in words and figures following, to-wit:

Petition for Appeal.

The above named plaintiff, United States Mining Company, believing itself aggrieved by the order, judgment and decree entered on March 23, 1903, in the above entitled proceeding, doth hereby appeal from said order, judgment and decree, to the United States Circuit Court of Appeals in and for the Eighth Circuit for the reasons specified in the assignment of errors filed herein, and prays that this its appeal, may be allowed and that a transcript of the record, proceedings and papers upon which said order, judgment and decree

was made, duly authenticated, may be sent to the United States Circuit Court of Appeals in and for the Eighth Circuit.

W. H. DICKSON & GEO. SUTHERLAND,
Attorneys for Complainant and Appellant United States Mining Co.

And now, to-wit: On March 25th, 1903, it is ordered that the appeal be allowed as prayed for.

JOHN A. RINER,
District Judge for the District of Wyoming, Assigned to hold the United States Circuit Court in and for the District of Utah.

Filed March 25, 1903. Jerrold R. Letcher, Clerk.

571 And afterwards, and on the 25th day of March, 1903, said complainant files its assignment of errors herein, which, being entitled in said Court and Cause, is in words and figures following to-wit:

Assignment of Errors.

Comes now the complainant and files the following assignment of errors, upon which it will rely upon its appeal from the decree made by this Honorable court on the 23rd day of March, 1903, in the above entitled cause, and said complainant says that the said decree in said cause is erroneous and against the just rights of said plaintiff, for the following reasons:

1. Because the evidence showed that the plaintiff was and is the owner and in possession of the Northern Light, the Grizzly, the Jordan Extension and the Fairview lode mining claims, mentioned and described in the bill of complaint in said cause, and that the ore bodies in dispute in this cause all lie within the exterior boundaries of said claims extended downward vertically, and that all the minerals and ores contained therein were and are the property of the said complainant, and the said complainant was at the time of the commencement of this action, and ever since has been and now is in the possession thereof, and therefore the court erred in that it did not so hold, adjudge and decree.

2. Because the evidence showed that the plaintiff is and was the owner and in the possession of the Jordan and the Gem lode mining claims, mentioned and described in the bill of complaint in this cause, which said mining claims lie contiguous to and adjoining each other and southerly of the said Northern Light, Grizzly, Jordan Extension and Fairview lode mining claims; that the ore bodies in controversy in this cause lying beneath the surface of the said last four named mining claims, all belong to a single broad vein or lode of rock in place, bearing gold, silver, lead and other metals, said vein or lode consisting of an altered and mineralized belt of limestone, from 100 to 200 feet in width and developed for about three miles in length, upon a part of the width of the apex of which said vein or lode the said Jordan and the said Gem mining claims, owned and possessed by the plaintiff, are located, so as to give the plaintiff extralateral rights upon said vein or lode for the entire width thereof upon the dip to and including the said ore bodies in dispute in this

cause, and each and all of them; that although the Kempton mining claim, owned by the defendants, is also located upon a part of the width of the said apex of the said vein or lode, yet the said Jordan and the said Gem mining claims were duly and properly located long prior to the location of the said Kempton lode mining
572 claim, and that upon and by virtue of said prior locations, the said Jordan and Gem mining claims were duly patented by the United States to the predecessors in title and interest of the plaintiff; that said vein or lode at its apex and upon its strike crosses the easterly end line of the said Jordan mining claim, and at its apex and upon its course and strike continues westerly within the side lines of the said Jordan mining claim for a distance of about 1,500 feet and thence crosses the easterly end line of the said Gem mining claim, and at its apex and on its course and strike continues thence westerly through the said Gem lode mining claim to and across its westerly end line, and that said vein on its dip or in its course downward, departs so far from the perpendicular as to pass beyond the northerly side line of the said Jordan mining claim and the northerly side line of the said Gem mining claim, and extends on its dip to, beneath and beyond the said Jordan Extension mining claim, the said Northern Light mining claim, the said Grizzly mining claim, the said Fairview mining claim and the said Kempton and Ashland mining claims, mentioned and described in the answer of defendants in this cause, and includes all of the ore bodies in controversy in this cause, and therefore, the court erred in not holding, adjudging and decreeing that each and all of the ore bodies in controversy in this cause belonged to and were a part of the said vein or lode so having its apex in the said Jordan and Gem mining claims as aforesaid, and that each and all of said ore bodies belonged to and were the property of and in the possession of the said complainant.

3. The evidence showed that the broad vein or lode hereinbefore described upon a part of the width of the apex of which the said Kempton mining claim was located, does not, either in whole or in part, at its apex and on its course and strike, enter or cross either of the end lines of the said Kempton, but on the contrary, crosses two diverging side lines of the said Kempton mining claim, and therefore, all other questions aside, the court erred in not holding, adjudging and decreeing that the said defendants had no right to follow said lode on its dip outside the surface lines of the said Kempton extended downward vertically.

4. The evidence showed that certain north and south fissures, which are found partly within and partly without the said Kempton lode mining claim and the said Ashland lode mining claim, which said fissures were and are claimed by the defendants to be and to constitute a vein or veins to which the ore bodies in dispute in part belong, cross opposite side lines of the said Kempton mining claim, and that each and all of the ore bodies in controversy in this
573 cause lie northerly of and entirely beyond the northerly side line of the said Kempton mining claim and therefore, all other questions aside, the court erred in not holding, adjudging and decreeing that the said defendants had no right to follow said fis

sures, or any of them, beyond the northerly side line extended downward vertically of the said Kempton mining claim.

5. The evidence showed that the Ashland fissure, mentioned in the answer of defendants, and described as crossing the south end line of the said Ashland mining claim and continuing thence within the side lines of the said Ashland to a point 900 feet easterly, and to which it was and is claimed by said defendants that some of the ore bodies in dispute belong, departs from the westerly side line of the said Ashland lode mining claim at or about 900 feet easterly of said southerly end line, at which point it enters the said Grizzly lode mining claim, owned and possessed by complainant, across the easterly side line thereof and crossing said Grizzly mining claim, departs therefrom over the westerly side line thereof, and that the said ore bodies last referred to and that all of the ore bodies in dispute, which are claimed by defendants to belong to said Ashland fissure and to be a part thereof, lie vertically beneath the surface of the said Grizzly mining claim, which claim was duly and properly located long prior to the location of the said Ashland mining claim, and therefore, all other questions aside, the court erred in not holding, adjudging and decreeing that if said ore bodies so lying beneath the surface of the said Grizzly are a part or belong to the said Ashland fissure, yet the complainant, as the owner and in possession of the said Grizzly mining claim, has a superior right to that of the defendants, or any of them, in and to said ore bodies.

6. Because the evidence showed that certain ore bodies having their top or apex within the surface boundaries of the Kempton mining claim and which were claimed by the defendants to constitute the Kempton vein, to which it was claimed by defendants some of the ore bodies in dispute upon the dip belong, did not either in whole or in part enter or cross either of the end lines of the said Kempton mining claim, but on the contrary crosses two diverging side lines of the said Kempton, and therefore, all other questions aside, the court erred in not holding, adjudging and decreeing that the owners of the said Kempton, if the said ore bodies constituted a vein, had no right to follow the same on its dip outside the surface lines of the said Kempton extended vertically downward.

7. Because the evidence showed that a large portion of the ore bodies lying beneath the surface of the Fairview, the Northern Light, the Grizzly, and the Jordan Extension mining claims,
574 were entirely easterly of and beyond a plane drawn parallel to the end lines of the said Kempton mining claim through a point where the defendants by their evidence admitted and contended that the vein claimed by the defendants as the Kempton vein terminated in its course eastward, and a large portion of the ore bodies in controversy lay westerly of and entirely beyond a plane drawn parallel to the end lines of the said Kempton vein through a point where the defendants by their evidence admitted and contended that the vein terminated in its course westerly, and therefore, all other questions aside, the court erred in dismissing the bill.

8. The court erred in making and entering a decree dismissing the plaintiff's bill of complaint.

9. The court erred in not making and entering a decree in favor

of complainant, adjudging and decreeing to complainant the relief prayed for in its bill of complaint.

Wherefore, the said plaintiff prays that the said decree be reversed and that the said court may be directed to enter a decree in accordance with the prayer of the plaintiff's bill.

W. H. DICKSON,
GEO. SUTHERLAND,
Solicitors for Plaintiff.

Filed March 25, 1903. Jerrold R. Letcher, Clerk.

And afterwards, and on the 25th day of March, 1903, said plaintiff filed its supersedeas bond herein, which, being entitled in this court and cause, is in words and figures following, to-wit:

Supersedeas Bond.

Know All Men By These Presents: That the United States Mining Company, a corporation organized under the laws of the State of Maine, and the Utah Savings & Trust Company, a corporation duly existing under and by virtue of the laws of the state of Utah, are held and firmly bound unto the above named defendants and each of them in the full and just sum of two hundred and fifty dollars to be paid to the said defendants, their heirs, executors, administrators and assigns, for which payment, well and truly to be made, the said corporations bind themselves, their successors and assigns jointly and severally by these presents:

Sealed and dated this 25th day of March, A. D. 1903.

Whereas, lately at the December term of the said Circuit Court of the United States in and for the District of Utah, in a suit pending in said court between the above named plaintiff and the above
575 named defendants, a decree was rendered against the said plaintiff and the said plaintiff has obtained an appeal of the said court to reverse the said decree in the aforesaid suit and a citation directed to the said defendants citing and admonishing them to be and appear in the United States Circuit Court of Appeals for the Eighth Circuit in the City of St. Louis, Missouri, sixty days from and after the date of said citation.

Now, the condition of said obligation is such that if the said plaintiff shall prosecute said appeal to effect and answer all damages and costs if it fail to make good its plea, then the above obligation to be void, else to remain in full force and virtue.

In Witness whereof the United States Mining Company has caused these presents to be executed by William M. Bradley, its agent and attorney duly authorized thereto, and the Utah Savings & Trust Company has caused these presents to be executed by Stephen H. Lynch, its Manager, thereunto duly authorized by resolution of its board of directors.

UNITED STATES MINING COMPANY, [SEAL.]
By WM. M. BRADLEY, *Its Agent and Attorney.*
UTAH SAVINGS & TRUST COMPANY, [SEAL.]
By S. H. LYNCH, *Its Manager.*

Approved: JOHN A. RINER, *Judge.*

Filed March 25, 1903. Jerrold R. Letcher, Clerk.

And afterwards, and on the 25th day of March, 1903, an order was made and entered allowing said petition for appeal, which, being entitled in said court and cause, is in words and figures following, to wit:

Order Allowing Petition on Appeal.

At this day comes the plaintiff by its attorneys, W. H. Dickson and George Sutherland, and files and presents to the Court its petition for the allowance of an appeal intended to be urged by it to the United States Circuit Court of Appeals in and for the Eighth Circuit, together with its assignment of errors, and a bond in the sum of $250.00, conditioned according to law, and prays that its appeal may be allowed, and that a transcript of the record, proceedings and papers upon which said order, judgment and decree was made, duly authenticated, may be sent to the said United States Circuit Court of Appeals in and for the Eighth Circuit.

576 On consideration whereof it is Ordered by the Court that said appeal be allowed and said bond approved; and it is further Ordered that said bond shall operate as a supersedeas bond.

Stipulation in Re Transcript.

And afterwards, and on the 10th day of April, 1903, a stipulation was filed by the parties hereto that the transcript of the record on appeal include certain papers, which being entitled in said Court and Cause, is in words and figures following, to-wit:

It is hereby stipulated between the plaintiff, by its attorneys, and the defendants, by their attorneys, the transcript of the record on the appeal in the above entitled cause shall be made up of the following papers:

Amended bill of complaint, demurrer to amended complaint, demurrer to amended bill overruled and temporary injunction *versus* defendants' issue, Opinion of Court *in re* demurrer and temporary injunction, answer of defendants to plaintiff's amended bill, replication of plaintiff to answer of defendants, amended answer, stipulation *in re* evidence, order giving defendant leave to file amended answer, and making Ivanhoe Mining Company party defendant, defendants' motion to dismiss cause, motion to dismiss argued and submitted, all exhibits admitted in evidence upon the part of the plaintiff and defendants, the plaintiff's exhibits being marked with the letters of the alphabet from A to Z and from AA to SS, and defendants' exhibits from 1 to 33, inclusive, with the exception of the exemplified copies of papers from the General Land Office, upon which the Old Jordan lot number 64, and Mountain Gem, lot number 475, mining claims were patented. In these two exhibits, all papers shall be omitted from the record except the patents themselves, and it is stipulated and agreed that the Old Jordan, lot number 64, and the Mountain Gem, lot number 475, were patented upon the location notices which are contained in the said exempli-

fied copies, which are the same location notices as those admitted in evidence and marked exhibits "V" and "Z," respectively. Amendment to amended answer, plaintiff's replication to answer as amended, Entry of appearance of Ogden Hiles and L. R. Rogers as solicitors for Ivanhoe Mining Company, transcript of testimony, stipulation *in re* evidence and exhibits, final decree dismissing plaintiff's bill, order modifying and continuing injunction and undertaking thereon, petition for appeal and allowance
577 thereon, assignment of errors, supersedeas bond, citation, acknowledgment of service.

SUTHERLAND, VAN COTT & ALLISON,
DICKSON, ELLIS & ELLIS,
Solicitors for Plaintiff.
L. R. ROGERS, OGDEN HILES,
Solicitors for Defendants.

Indorsed: Filed April 10, 1903. Jerrold R. Letcher, Clerk.

Order Re Exhibits and Maps.

And afterwards and on the 20th day of May, 1903, an order was made and entered in said court, which, being entitled in said Court and Cause is in words and figures following, to-wit:

At this day on motion of Ogden Hiles, attorney for defendant herein, and by consent of the attorneys for plaintiff, it is Ordered that the originals of all such exhibits and maps as the parties hereto may by stipulation designate, in lieu of copies, may and shall be certified to the Clerk of the United States Circuit Court of Appeals for the Eighth Circuit on return to the appeal herein.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to Leonidas M. Lawson, William J. Harvey, Edward Balbach, Junior, Heber M. Wells, Enos A. Wall, Thomas Kearns and Junius F. Wells, Greeting:

You are hereby cited and admonished to be and appear in the United States Circuit Court of Appeals in and for the Eighth Circuit, at the City of St. Louis, Missouri, sixty days from and after the day this citation bears date, pursuant to an appeal allowed and filed in the clerk's office of the Circuit Court of the United States for the District of Utah, wherein the United States Mining Company, a corporation, is appellant, and you are appellees, to show cause, if any there be, why the decree rendered against the said appellant, as in said appeal mentioned, should not be corrected and why speedy justice should not be done the parties in that behalf.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, this 25th day of March, in the year of our Lord one thousand nine hundred and three.

JOHN A. RINER,
District Judge for the District of Wyoming,
Assigned to Hold the United States Circuit
Court in and for the District of Utah.

578 I hereby, this 26th day of March, A. D. 1903, accept due personal service of this citation, on behalf of the above named appellees.

OGDEN HILES,
LINDSAY R. ROGERS,
Solicitors for Appellees.

Lodged with Clerk March 26, 1903. Jerrold R. Letcher, Clerk.

UNITED STATES OF AMERICA, *District of Utah, ss:*

I, Jerrold R. Letcher, Clerk of the United States Circuit Court for the District of Utah, do hereby certify that the foregoing pages numbered from one to 876 inclusive, contain a full, true and complete transcript of all pleadings, proceedings and entries as specified in that certain written stipulation signed by the attorneys, for the respective parties and made a part hereof, and of all pleadings, proceedings and entries that said transcript purports to contain, in a certain cause adjudicated in said Court, wherein United States Mining Company, a corporation, was plaintiff and Leonidas M. Lawson, *et al.*, were defendants, as full, true and complete as the originals of the same now remain on file and of record in my office.

I further certify that all proceedings and exhibits not included therein—or transmitted pursuant to stipulation—have been omitted and retained at the request of the parties respectively.

I further certify that the original citation is hereto attached and herewith returned with the transcript of the record in said cause.

In Testimony Whereof, I have hereunto affixed my official signature, and the seal of said Court, at Salt Lake City, in said district, on this 21st day of May, A. D. 1903, and the 127th of the Independence of the United States of America.

[Seal United States Circuit Court, District of Utah.]

JERROLD R. LETCHER,
Clerk U. S. Circuit Court, District of Utah.

Filed May 25, 1903. John D. Jordan, Clerk.

Be it Remembered, That on the seventeenth day of June, A. D. 1903, in the record of the proceedings of the United
579 States Circuit Court of Appeals for the Eighth Circuit is an order in said cause, in the words and figures following, to-wit:

In the United States Circuit Court of Appeals for the Eighth Circuit, May Term, 1903.

WEDNESDAY, *June* 17, 1903.

No. 1927.

UNITED STATES MINING COMPANY, a Corporation, Plaintiff and Appellant,

v.

LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, Junior, HEBER M. WELLS, ENOS A. WALL, THOMAS KEARNS, JUNIUS F. WELLS and THE IVANHOE MINING COMPANY, a Corporation, Defendants and Respondents.

Appeal from the Circuit Court of the United States for the District of Utah.

Upon reading and filing the stipulation and agreement of the respective parties to the above entitled cause and due and sufficient reason appearing therefor, it is ordered that the citation and other appeal papers in the said cause be amended by adding the name of the Ivanhoe Mining Company, a corporation, as a party defendant and appellee thereto, and that the amended supersedeas and cost bond executed by the United States Mining Company, a corporation, as principal, and the Utah Savings & Trust Company, a corporation, as surety, is approved and shall be filed as and for the bond on appeal herein.

And on said seventeenth day of June, A. D. 1903, there was filed in the Clerk's office of said Circuit Court of Appeals a stipulation to amend the transcript in said cause, in words and figures following, to-wit:

In the United States Circuit Court of Appeals for the Eighth Circuit.

No. 1927.

UNITED STATES MINING COMPANY, a Corporation, Plaintiff and Appellant,

v.

LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, Junior, HEBER M. WELLS, ENOS A. WALL, THOMAS KEARNS, JUNIUS F. WELLS and THE IVANHOE MINING COMPANY, a Corporation, Defendants and Respondents.

Stipulation.

It is hereby stipulated and agreed between the above named appellant and the respondents that the appeal from the order,
580 judgment and decree entered in the above entitled cause on March 23rd, A. D. 1903, in the Circuit Court of the United

States in and for the District of Utah, was duly taken and allowed in open court on March 25th, A. D. 1903; that the said appeal was in fact taken and allowed against all of the defendants, including the said Ivanhoe Mining Company, but by an unintentional oversight the name of the defendant Ivanhoe Mining Company, a corporation, was omitted from the citation and from the other appeal papers.

And now, in consideration of the premises, it is further stipulated and agreed by the above named parties that the said citation and the other appeal papers may be amended by inserting therein by interlineation or otherwise the name of the defendant Ivanhoe Mining Company, a corporation, as of the respective dates of the said citation and the other appeal papers, and that the said Ivanhoe Mining Company, a corporation, is and shall be considered in all proceedings a party to this appeal.

And the said defendants and each of them, including the said Ivanhoe Mining Company, a corporation, does hereby expressly waive any and all objection which it might otherwise have on account of the omission of the name of the said defendant from the said citation and other appeal papers, and due service of the said citation upon the said Ivanhoe Mining Company is hereby admitted and accepted as of the 25th day of March, A. D. 1903.

It is further agreed that the amended supersedeas and cost bond executed by the United States Mining Company, a corporation, as principal, and the Utah Savings & Trust Company, a corporation, as surety, and transmitted to the clerk of the United States Circuit Court of Appeals for the Eighth Circuit herewith is good and sufficient and may be approved and filed as and for the bond on appeal herein.

Dated this 11th day of June, A. D. 1903.

WM. H. DICKSON,
GEO. SUTHERLAND,
Solicitors for Appellant.
L. R. ROGERS,
OGDEN HILES,
Solicitors for Respondents.

No. 1927. United States Mining Co., Appellant *vs.* Leonidas M. Lawson, *et al.* Stipulation to amend transcript to show appeal against Ivanhoe Mining Company, etc.
Filed June 17, 1903. John D. Jordan, Clerk.

581 And on the seventeenth day of June, A. D. 1903, an amended supersedeas bond was filed in the Clerk's office of said Circuit Court of Appeals, in said cause, in the words and figures following, to-wit:

United States Circuit Court, District of Utah.

No. 1927.

UNITED STATES MINING COMPANY, a Corporation, Plaintiff,
v.
LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, Junior, HEBER M. WELLS, ENOS A. WALL, THOMAS KEARNS, JUNIUS F. WELLS and THE IVANHOE MINING COMPANY, a Corporation, Defendants.

Amended Bond.

KNOW All Men By These Presents: That the United States Mining Company, a corporation organized under the laws of the State of Maine, and the Utah Savings & Trust Company, a corporation duly existing under and by virtue of the laws of the State of Utah, are held and firmly bound unto the above named defendants and each of them in the full and just sum of two hundred and fifty dollars to be paid to the said defendants, their heirs, executors, administrators, successors and assigns, for which payment, well and truly to be made, the said corporations bind themselves, their successors and assigns jointly and severally by these presents.

Sealed and dated this 11th day of June, A. D. 1903.

Whereas, lately at the December term of the said Circuit Court of the United States in and for the District of Utah, in a suit depending in said court between the above named plaintiff and the above named defendants, a decree was rendered against the said plaintiff and the said plaintiff has obtained an appeal of the said court to reverse the said decree in the aforesaid suit and a citation directed to the said defendants citing and admonishing them to be and appear in the United States Circuit Court of Appeals for the Eighth Circuit in the City of St. Louis, Missouri, sixty days from and after the date of said citation:

Now, the condition of said obligation is such that if the said plaintiff shall prosecute said appeal to effect and answer all damages and costs if it fail to make good its plea, then the above obligation to be void, else to remain in full force and virtue.

582 In Witness Whereof, the United States Mining Company has caused these presents to be executed by William M. Bradley, its agent and attorney duly authorized thereto, and the Utah Savings and Trust Company has caused these presents to be executed by Stephen H. Lynch, its Manager, thereunto duly authorized by resolution of its board of directors.

UNITED STATES MINING COMPANY, [SEAL.]
By WILLIAM M. BRADLEY, *Its Agent and Attorney.*
UTAH SAVINGS & TRUST COMPANY, [SEAL.]
By S. H. LYNCH, *Its Manager.*

Utah Savings & Trust Co., Incorporated April 16th, 1889.

Approved this 17 day of June, 1903.

WALTER H. SANBORN, *Judge.*

No. 1927. United States Mining Co., Appellants, *vs.* Leonidas M. Lawson, *et al.* Amended Supersedeas Bond on Appeal.
Filed June 17, 1903. John D. Jordan, Clerk.

And on the seventeenth day of June, A. D. 1903, an amended citation, with the acceptance of service thereon, was filed in the Clerk's office of said Circuit Court of Appeals in said cause, in words and figures following, to-wit:

Amended Citation.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to Leonidas M. Lawson, William J. Harvey, Edward Balbach, Junior, Heber M. Wells, Enos A. Wall, Thomas Kearns, Junius F. Wells and the Ivanhoe Mining Company, a corporation, Greeting:

You are hereby cited and admonished to be and appear in the United States Circuit Court of Appeals in and for the Eighth Circuit, at the City of St. Louis, Missouri, sixty days from and after the day this citation bears date, pursuant to an appeal allowed and filed in the Clerk's office of the Circuit Court of the United States for the District of Utah, wherein the United States Mining Company, a corporation, is appellant, and you are appellees, to show cause,
583&584 if any there be, why the decree rendered against the said appellant, as in said appeal mentioned, should not be corrected and why speedy justice should not be done the parties in that behalf.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, this 17 day of June, in the year of our Lord one thousand nine hundred and three.

WALTER H. SANBORN,
Judge of the United States Circuit Court of Appeals for the Eighth Circuit.

I hereby, this 17th day of June, A. D. 1903, accept due personal service of this citation, on behalf of the above named appellees, as of March 25th, 1903.

L. R. ROGERS,
OGDEN HILES,
Solicitors for Appellees.

No. 1927. United States Mining Co., Appellant, *vs.* Leonidas M. Lawson, *et al.* Amended Citation.
Filed June 17, 1903. John D. Jordan, Clerk.

585 EXHIBIT "U."

General Land Office No. 2363 — Mineral Certificate No. 248

The United States of America to all to whom these presents shall come, Greeting:

Whereas, In pursuance of the provisions of the Revised Statutes of the United States, Chapter Six, Title Thirty-two, there have been

deposited in the General Land Office of the United States the Plat and Field Notes of survey of the claim of Liberty E. Holden upon the Jordan Silver Mining Company's Mine accompanied by the Certificate of the Register of the Land Office at Salt Lake City in the Territory of Utah whereby it appears that in pursuance of the said Revised Statutes of the United States, Liberty E. Holden did, on the eighth day of June, 1877, enter and pay for said mining claim or premises, being Mineral Entry No. 248, in the series of said Office, designated by the Surveyor General as Lot No. 64, embracing a portion of the unsurveyed public domain in the West Mountain Mining District in the County of Salt Lake and Territory of Utah in the District of Lands subject to sale at Salt Lake City, containing nineteen (19) acres and ninety-nine hundredths (99/100) of an acre of land, more or less, and, according to the returns on file in the General Land Office, bounded, described, and platted as follows, with magnetic variation at seventeen (17) degrees East to wit: Beginning at a Pine Post 3x4 inches in size, marked "U. S. L. 64, P. No. 1," set in mound of slag and stones at the South Easterly Corner of the claim, from which United States Mineral Monument No. 1, bears South Sixty-eight (68) degrees thirteen (13) minutes West, at the distance of seven hundred and seventy-one (771) feet; Thence from said Post No. 1, North twelve (12) degrees thirty (30) minutes West, one hundred (100) feet to Discovery, one hundred and twenty-four (124) feet, to the Easterly boundary of survey made for the Red Warrior Mine, from which Post No. 6 of said Red Warrior Mine, bears south fifty-three (53) degrees thirty (30) minutes West, at the distance of six hundred and fifty feet, one hundred and forty-five (145) feet to the Easterly boundary of survey made for the Sturgis Mine, from which Post No. 2 of said Sturgis Mine bears south forty-eight (48) degrees thirty (30) minutes West at the distance of thirty-seven (37) feet, one hundred and eighty (180) feet to Utah Company's House, two hundred (200) feet to a Pine Post four (4) inches square marked "U. S. L. 64 P. No. 2" set in mound of stones at North Easterly corner of the claim: Thence South Seventy-
586 seven (77) degrees thirty (30) minutes West, seventy-one (71) feet to Southerly boundary of said Sturgis Mine, from which Post No. 1 of said Sturgis Mine bears North forty-one (41) degrees thirty (30) minutes West, at the distance of eighteen (18) feet, ninety (90) feet to a point from which Discovery on said Red Warrior Mine, bears South at about ten (10) feet, one hundred and forty-two (142) feet to Westerly boundary of said Red Warrior Mine, from which Post No. 4 of said Red Warrior Mine, bears South thirty-three (33) degrees forty (40) minutes East, at the distance of six (6) feet, one hundred and ninety (190) feet to a Point from which the Mouth of Jordan Tunnel bears South-East at the distance of twenty-two (22) feet, two hundred and eighty-six (286) feet to Gulch, three hundred and thirty-four (334) feet to Bingham Canon Rail Tramway, six hundred and twenty-eight (628) feet to Easterly boundary of survey No. 39, Patented to Isador Morris with his claim upon the Galena Mine, from which Post No. 2 of said survey No. 39 bears South thirty-three (33) degrees thirty-nine (39) minutes

West at the distance of four hundred and fifty-two (452) feet, eight hundred and thirty-five (835) feet to Westerly boundary of said survey No. 39, from which Post No. 5 of said survey No. 39 bears South thirty-three (33) degrees thirty-nine (39) minutes West, at the distance of three hundred (300) feet eleven hundred and forty-six (1146) feet to Easterly boundary of survey made for the Neptune Mine from which Post No. 2, of said Neptune Mine, bears South fifty-one (51) degrees fifteen (15) minutes West, at the distance of four hundred and sixty-four (464) feet, twelve hundred and eight (1208) feet to the Easterly boundary of survey No. 55, Patented to Benjamin M. DuRell *et al.* with their claim upon the Kempton Mine from which Post No. 4 of said survey No. 55 bears South fifty-one (51) degrees thirty (30) minutes West at the distance of four hundred and ninety-four (494) feet, fifteen hundred and ninety-three (1593) feet to the Westerly boundary of said survey No. 55, from which Post No. 7 of said survey No. 55 bears South fifty-one (51) degrees thirty (30) minutes west, at the distance of one hundred and twenty-two (122) feet, sixteen hundred and seventy (1670) feet to the Easterly boundary of survey No. 67, Patented to George Hearst with his claim upon the Ashland Mine, from which Post No. 6 of said survey No. 67 bears South twenty-eight (28) degrees West, at the distance of one hundred and seventy-three (173) feet, seventeen hundred (1700) feet to highest point of Ridge eighteen hundred and thirty-eight (1838) feet to Easterly boundary of survey No. 53, Patented to George Hardie, with his claim upon the Northern Light Mine, from which Post No. 1 of said survey No. 53, bears South twenty-five (25) degrees West, at the distance of one hundred and twenty-two (122) feet and Ashland Discovery Monument bears
587 South four (4) degrees twenty-four (24) minutes West at the distance of sixty-nine (69) feet, nineteen hundred and twenty-three (1923) feet to Northerly boundary of said survey No. 55, from which Post No. 1 of said survey No. 55, bears North seventy-five (75) degrees thirty (30) minutes West, at the distance of eighty-seven (87) feet, nineteen hundred and thirty-six (1936) feet to the Westerly boundary of said survey No. 67, from which Post No. 2 of said survey No. 67, bears South thirty-six (36) degrees East, at the distance of one hundred and eighty (180) feet, nineteen hundred and eighty-eight (1988) feet to Trail in Gulch, two thousand and eighteen (2018) feet to the Westerly end line of said survey No. 55, from which Post No. 1 of said survey No. 55, bears North fourteen (14) degrees thirty (30) minutes East, at the distance of forty-six (46) feet, two thousand and forty-two (2042) feet to Southerly boundary of said survey No. 53, from which Post No. 2 of said survey No. 53 bears North sixty-five (65) degrees West, at the distance of thirty-nine (39) feet, two thousand and eighty-four (2084) feet, to the Easterly boundary of survey made for the Grizzly Mine from which Post No. 1 of said Grizzly Mine, bears South fifty-four (54) degrees West at the distance of five hundred and sixteen (516) feet, twenty-one hundred and sixty-eight (2168) feet to the Westerly boundary of said Neptune Mine, from which Post No. 6 of said Neptune Mine, bears North fifty-four (54) degrees West, at the

distance of thirty-nine (39) feet, twenty-three hundred and seventy (2370) feet to Top of Ridge, twenty-five hundred and ninety-two (2592) feet to the Westerly boundary of said Grizzy Mine from which Post No. 2 of said Grizzly Mine bears South fifty-four (54) degrees West at the distance of forty-two (42) feet, thirty-one hundred and thirty-eight (3138) feet to Gulch, three thousand nine hundred and thirteen (3913) feet to Dump and Open Cut, four thousand and *thirty (4038)* feet to Muddy Canon and Creek, four thousand one hundred and sixty-three (4163) feet to Trail, from which the North end of Last Chance Boarding House bears South Ten (10) degrees thirty (30) minutes *(30) minutes* east at the distance of one hundred and nine (109) feet, five thousand two hundred (5200) feet to a Pine Post four (4) inches square, marked "U. S. L. 64, P. No. 3," set in mound of stones at North Westerly Corner of the claim, from which United States Mineral Monument No. 5 bears North forty-seven (47) degrees nineteen (19) minutes East, at the distance of one hundred and fifty-two (152) feet: Thence from said Post No. 3, South twelve (12) degrees thirty (30) minutes East, two hundred (200) feet to a Pine Post, four (4) inches square, marked "U. S. L. 64 P. No. 4" set in mound of Stones, at South Westerly corner of the claim: Thence North seventy-seven
588 (77) degrees thirty (30) minutes East ten hundred and thirty (1030) feet to Muddy Canon and Creek, twenty-six hundred and forty-nine (2649) feet to corner common to said Grizzly and Neptune Mines, three thousand and thirty-four (3034) feet to the Westerly boundary of survey No. 69, Patented to Isador Morris with his claim upon the Ashland No. 2 Mine from which Post No. 1 of said survey No. 69, bears North thirty-six (36) degrees East at the distance of one hundred and twenty-two (122) feet three thousand one hundred and ninety-eight (3198) feet to Southerly boundary of said survey No. 67 from which Post No. 1 of said survey No. 67 bears south fifty-four (54) degrees East, at the distance of ninety-five (95) feet, three thousand two hundred and seventy-five (3275) feet to the Southerly boundary of said survey No. 55, from which Post No. 3 of said survey No. 55, bears South seventy-five (75) degrees thirty (30) minutes East, at the distance of eighty-three (83) feet, three thousand three hundred and thirty-five (3335) feet to Easterly boundary of said survey No. 67, from which Post No. 1 of said survey No. 67 bears South thirty-six (36) degrees West, at the distance of one hundred and two (102) feet, three thousand five hundred and seventy-five (3575) feet to the Easterly boundary of said survey No. 55, from which Post No. 4 of said survey No. 55, bears South fifty-one (51) degrees thirty (30) minutes West at the distance of thirty-eight (38) feet, three thousand six hundred and fifty-eight (3658) feet to the Easterly boundary of said Neptune Mine, from which Post No. 2, of said Neptune Mine bears South Fifty-one (51) degrees fifteen (15) minutes West, at the distance of twelve (12) feet, four thousand one hundred and fifty-three (4153) feet to the Westerly boundary of said survey No. 39, from which Post No. 5 of said survey No. 39, bears South thirty-three (33) degrees thirty-nine (39) minutes West, at the distance of eleven (11)

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feet, four thousand three hundred and sixty (4360) feet to the Easterly boundary of said survey No. 39, from which Post No. 2 of said survey No. 39 bears South thirty-three (33) degrees thirty-nine (39) minutes West, at the distance of one hundred and sixty-three (163) feet, four thousand four hundred and five (4405) feet to a Point from which Old Shaft, bears South twelve (12) degrees thirty (30) minutes East, at the distance of above forty (40) feet, four thousand six hundred and twelve (4612) feet to the North westerly boundary of said Red Warrior Mine from which Post No. 5 of said Red Warrior Mine, bears South fifty-three (53) degrees thirty (30) minutes West at the distance of sixty-three feet four thousand six hundred and fifty-two (4652) feet to Bingham Canon Rail Tramway, four thousand eight hundred and seventy-seven (4877) feet to a point from which Jordan Tunnel No. 1,
589 bears North sixty-four (64) degrees West four thousand nine hundred and twelve (4912) feet to the Southerly boundary of said Red Warrior Mine, from which Post No. 6 of said Red Warrior Mine, bears South fifty-three (53) degrees thirty (30) minutes West, at the distance of three hundred and thirty-seven (337) feet, four thousand nine hundred and thirty (4930) feet to a Point from which Barr and Childs Saloon on North side of Bingham Road, bears North at the distance of about five (5) feet, four thousand nine hundred and seventy (4970) feet to a Point from which George Jackson's Hotel, bears North at the distance of about fifteen (15) feet, five thousand (5000) feet to a point from which the Jordan Silver Mining Company's Office, bears North at the distance of about twenty-five (25) feet five thousand one hundred (5100) feet to a Point from which Morris Store, bears North at the distance of about twenty (20) feet, five thousand two hundred (5200) feet to the place of beginning, containing nineteen (19) acres and ninety-nine 99/100 of an acre of land more or less, and embracing fifty-two hundred (5200) linear feet Westerly from Discovery on said Jordan Silver Company's Mine. It being the express intent and meaning of these presents to convey to the Grantee herein fifty-two hundred (5200) linear feet of the said Jordan Silver Mining Company's Mine, together with the surface ground hereinbefore described which is not embraced by said surveys Nos. 39, 53, 55, 67 and 69, as represented by yellow shading in the following plat.

(Plat omitted.)

Now know ye, That the United States of America, in consideration of the premises, and in conformity with the said Revised Statutes of the United States, Have Given and Granted, and by these presents Do Give and Grant, unto the said Liberty E. Holden and to his heirs and assigns, the said mining premises hereinbefore described as Lot No. 64, embracing a portion of the unsurveyed Public Domain with the exclusive right of possession and enjoyment of all the land included within the exterior lines of said survey not herein expressly excepted from these presents, and of fifty-two hundred (5200) linear feet of the said Jordan Silver Mining Company's Mine vein, lode,

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ledge, or deposit for the length hereinbefore described throughout its entire depth although it may enter the land adjoining, and also of all other veins, lodes, ledges, or deposits throughout their entire depth, the tops or apexes of which lie inside the exterior lines of said survey at the surface extended downward vertically, although such veins, lodes, ledges, or deposits in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said survey: Provided, That the right of possession hereby
590 granted to such outside parts of said veins, lodes, ledges or deposits shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said survey at the surface so continued in their own direction that such vertical planes will intersect such exterior parts of said veins, lodes, ledges, or deposits: And provided further, That nothing in this conveyance shall authorize the grantee herein, his heirs, or assigns, to enter upon the service of a mining claim owned or possessed by another: To Have and To Hold said mining premises together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereunto belonging, unto the said Liberty E. Holden, and to his heirs, and assigns forever, subject, nevertheless, to the following conditions and stipulations:

First: That the grant hereby made is restricted to the land hereinbefore described as Lot No. 64 with fifty-two hundred (5200) linear feet of the Jordan Silver Mining Company's Mine, vein, lode, ledge, or deposit for the length aforesaid throughout its entire depth as aforesaid, together with all other veins, lodes, ledges, or deposits throughout their entire depths as aforesaid, the tops or apexes of which lie inside the exterior lines of said survey.

Second. That the premises hereby conveyed, with the exception of the surface, may be entered by the proprietor of any other vein, lode, ledge, or deposit, the top or apex of which lies outside the exterior limits of said survey, should the same in its downward course be found to penetrate, intersect, extend into or underlie the premises hereby granted, for the purpose of extracting and removing the ore from such other vein, lode, ledge or deposit.

Third. That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts.

Fourth: That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted, involving easements drainage, and other necessary means by its complete development.

591 In testimony whereof, I, Rutherford B. Hayes, President of the United States of America, have caused these Letters to be made Patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand at the City of Washington the fourteenth day of July in the year of our Lord one thousand eight hundred and

seventy-seven, and of the Independence of the United States the one hundred and second.

By the President.

R. B. HAYES,
By B. L. LANG, *Secretary.*
[SEAL.] S. W. CLARK,
Recorder of the General Land Office.

Recorded Vol. 28, Pages 297 to 308 inclusive.

Filed in U. S. Cir. Court Dist. of Utah, Oct. 23, 1902. Jerrold R. Letcher, Clerk.

In the United States Circuit Court for the District of Utah.

No. 467.

UNITED STATES MINING COMPANY,
vs.
LEONIDAS M. LAWSON ET AL.

It is hereby stipulated that the foregoing is a true copy of the patent contained in the original on file in this cause, and that the transcript of record may be amended by attaching the same thereto and the exhibit shall be printed and added to the printed record in this cause.

SUTHERLAND, VAN COTT & ALLISON,
DICKSON, ELLIS & ELLIS,
Attorneys for Plaintiff.
OGDEN HILES, *Attorney for Defendants.*

United States Circuit Court of Appeals, Eighth Circuit. No. 1927. United States Mining Company, Appellant, *vs.* Leonidas M. Lawson *et al.* Stipulation and Amendment to Transcript. Filed Sep. 8, 1903. John D. Jordan, Clerk.

EXHIBIT "Y."

General Land Office
No. 29681.

Mineral Certificate
No. 2340.

The United States of America, to all to whom these Presents shall come, Greeting:

Whereas, In pursuance of the provisions of the Revised Statutes of the United States, Chapter Six, Title Thirty-two, and legislation supplemental thereto, there have been deposited in the General Land Office of the United States the Plat and Field Notes of survey
592 and the Certificate, No. 2340, of the Register of the Land Office at Salt Lake City, in the State of Utah, accompanied by other evidence, whereby it appears that the Old Jordan and Galena Mining Company did, on the thirty-first day of December, A. D. 1897, duly enter and pay for that certain mining claim or premises,

known as the Mountain Gem Lode mining claim, designated by the Surveyor General as Lot No. 475, survey No. 439 embracing a portion of the unsurveyed public domain, in the West Mountain Mining District, in the County of Salt Lake and State of Utah, in the District of Lands subject to sale at Salt Lake City, and bounded, described, and platted as follows, with magnetic variation sixteen degrees and forty minutes east.

Beginning at corner No. 1, a pine post four inches square marked U. S. L. 475 P. 1, in mound of stone.

Thence, first course, north twenty-five degrees and thirty-seven minutes west fourteen and six tenths feet intersect the northerly side line of the Excelsior lode claim lot No. 365, at north fifty-seven degrees and thirty-six minutes east sixty-five and sixty-six hundredths feet from post No. 6 of said claim; one hundred feet to a point from which discovery bears north sixty-four degrees and twenty-three minutes east eighty-eight feet distant; one hundred and forty-one and ninety-eight hundredths feet intersect the southerly side line of the Kempton lode claim lot No. 55 at north seventy-five degrees and thirty minutes west fifty-two and fifty-six hundredths feet from post No. 3 of said claim; two hundred feet to post No. 2.

Thence, second course, north sixty-four degrees and twenty-three minutes east forty-one and nineteen hundredths feet intersect south side line of the Jordan lode claim lot No. 64; four hundred and seventy and thirty-five hundredths feet to post No. 3, a pine post four inches square marked U. S. L. 475, P. 3 in mound of stones, from which the mouth of Jackson incline bears north eighty-two degrees east seventy feet distant and U. S. mineral monument No. 1 bears south eighty-three degrees and forty-four minutes east seven hundred and fourteen feet distant.

Thence, third course, south twenty-five degrees and thirty-seven minutes east Sixty-one and eighty-eight hundredths feet intersect the southerly side line of said lot No. 55 at north fifty-one degrees and thirty minutes east two hundred and forty-two and eighty-one hundredths feet from post No. 4 of said claim; one hundred feet intersect the south side line of said Lot No. 64; also intersect the northerly side line of said lot No. 366 at south forty-five degrees and forty-seven minutes west two hundred and eighty-eight and
593 forty-two hundredths feet from post No. 8 of said claim; two hundred feet to post No. 4, a pine post four inches square marked U. S. L. 475 in mound of stones from which U. S. mineral monument No. 1 bears north eighty degrees and forty minutes east six hundred and thirty-nine hundredths feet distant.

Thence, fourth course, south sixty-four degrees and twenty-three minutes west four hundred and seventy and thirty-five hundredths feet to corner No. 1, the place of beginning. Expressly excepting and excluding from these presents all that portion of the ground hereinbefore described embraced in said mining claims or lots Nos. 55, 64, and 366, and also all that portion of said Mountain Gem vein or lode and all veins lodes and ledges throughout their entire depth the tops or apexes of which lie inside of such excluded ground; said lot No. 475 extending four hundred and seventy and thirty-five

hundredths feet in length along said Mountain Gem vein or lode; the granted premises in said lot containing sixty hundredths of an acre of land more or less.

Now Know Ye, That there is therefore hereby Granted by the United States unto the said Old Jordan and Galena Mining Company and to its successors and assigns, the said mining premises hereinbefore described, and not expressly excepted from these presents, and all that portion of the said Mountain Gem vein, lode, or ledge, and of all other veins, lodes, and ledges, throughout their entire depth, the tops or apexes of which lie inside of the surface boundary lines of said granted premises in said Lot No. 475 extended downward vertically, although such veins, lodes, or ledges in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said premises. Provided, That the right of possession to such outside parts of said veins, lodes, or ledges shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said Lot No. 475 so continued in their own direction that such planes will intersect such exterior parts of said veins, lodes or ledges: And provided further, That nothing herein contained shall authorize the grantee herein to enter upon the surface of a claim owned or possessed by another:

To Have and To Hold said mining premises, together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereunto belonging unto the said grantee above named, and to its successors and assigns forever; subject nevertheless to the above-mentioned and to the following conditions and stipulations:

594 First. That the premises hereby granted, with the exception of the surface, may be entered by the proprietor of any other vein, lode or ledge, the top or apex of which lies outside of the boundary of said granted premises, should the same in its dip be found to penetrate, intersect, or extend into said premises, for the purpose of extracting and removing the ore from such other vein, lode, or ledge.

Second. That the premises hereby granted shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs and decisions of courts. And there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States.

Third. That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted, involving easements, drainage, and other necessary means to its complete development.

In Testimony Whereof, I, William McKinley, President of the United States of America, have caused these letters to be made Patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand at the City of Washington the eighteenth day of July, in the year of our Lord one thousand eight hundred and ninety-eight and of the Independence of the United States the one hundred and twenty-third.

By the President:

[L. S.]

WILLIAM McKINLEY,
By F. M. McKEAN, *Secretary.*
C. H. BRUSH,
Recorder of the General Land Office.

Recorded in Vol. 306, page 189.

(Plat omitted.)

Filed in U. S. Circuit Court, District of Utah. Oct. 23, 1902. Jerrold R. Letcher, Clerk.

In the United States Circuit Court for the District of Utah.

No. 467.

UNITED STATES MINING COMPANY
vs.
LEONIDAS M. LAWSON ET AL.

It is hereby stipulated that the foregoing is a true copy of the patent contained in the original on file in this cause, and
595 that the transcript of record may be amended by attaching the same thereto and the exhibit shall be printed and added to the printed record in this cause.

SUTHERLAND, VAN COTT & ALLISON,
DICKSON, ELLIS & ELLIS,
Attorneys for Plaintiff.
OGDEN HILES, *Attorney for Defendants.*

United States Circuit Court of Appeals, Eighth Circuit. No. 1927. United States Mining Company, Appellant, *vs.* Leonidas M. Lawson, *et al.* Stipulation and Amendment to Transcript. Filed Sep. 8, 1903. John D. Jordan, Clerk.

596 (*Clerk's Certificate.*)

United States Circuit Court of Appeals, Eighth Circuit.

I, John D. Jordan, Clerk of the United States Circuit Court of Appeals for the Eighth Circuit, do hereby certify that the foregoing printed record of five hundred ninety-five pages in the case of the United States Mining Company, a corporation, Appellant, *v.* Leonidas M. Lawson *et al.*, No. 1927, was printed under my supervision

and is identical with the printed record upon which said cause was heard and decided in the Circuit Court of Appeals.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of said Circuit Court of Appeals, at office in the City of St. Louis, Missouri, in the Eighth Circuit, this fifth day of May, A. D. 1905.

[Seal United States Circuit Court of Appeals, Eighth Circuit.]

JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

597 Pleas and proceedings in the United States Circuit Court of Appeals for the Eighth Circuit, at the September Term, 1904, of said Court, begun and held at the United States Court House in the City of Denver, Colorado, on the first Monday in September, to-wit: the fifth day of September, A. D. 1904, and which said September Term, 1904, was adjourned from the City of Denver, Colorado, to the City of St. Paul, Minnesota, as provided by law, before the Honorable Walter H. Sanborn, Honorable Willis Van Devanter and Honorable William C. Hook, Circuit Judges.

Attest:

[Seal United States Circuit Court of Appeals, Eighth Circuit.]

JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

Be it Remembered that heretofore, to-wit: on the twenty-fifth day of May, A. D. 1903, a transcript of record, pursuant to an appeal allowed by the Circuit Court of the United States for the District of Utah, was filed in the office of the Clerk of the United States Circuit Court of Appeals for the Eighth Circuit, wherein the United States Mining Company, a corporation, was Appellant, and Leonidas M. Lawson, *et al.*, were Appellees, which said transcript of record was filed and docketed in said Circuit Court of Appeals as No. 1927.

That thereafter the following proceedings were had in said cause, in said Circuit Court of Appeals, viz:

598 (*Appearance for Appellant.*)

On the first day of June, A. D. 1903, the appearance of counsel for appellant was filed in the Clerk's office of said Circuit Court of Appeals in said cause, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit.

No. 1927.

UNITED STATES MINING COMPANY, a Corporation, Appellant,
vs.
LEONIDAS M. LAWSON, ET AL.

The Clerk will enter my appearance as Counsel for the Appellant.

W. H. DICKSON,
GEORGE SUTHERLAND.

(Endorsed:) U. S. Circuit Court of Appeals, Eighth Circuit. No. 1927. United States Mining Co., a corporation, Appellant, *vs.* Leonidas M. Lawson, *et al.* Appearance. Filed Jun. 1, 1903. John D. Jordan, Clerk. W. H. Dickson, George Sutherland, Counsel for Appellant.

(*Appearance for Appellees.*)

And on the twelfth day of June, A. D. 1903, the appearance of counsel for appellees was filed in the Clerk's office of said Circuit Court of Appeals in said cause, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit.

No. 1927.

UNITED STATES MINING COMPANY, Appellant,
vs.
LEONIDAS M. LAWSON ET AL.

The Clerk will enter my appearance as Counsel for the Appellees.

599

OGDEN HILES,
Solicitor for Appellees.

CHAS. J. HUGHES, JR.,
L. R. ROGERS,
Of Counsel.

(Endorsed:) U. S. Circuit Court of Appeals, Eighth Circuit. No. 1927. United States Mining Company, Appellant, *vs.* Leonidas M. Lawson, *et al.* Appearance. Filed Jun. 12, 1903. John D. Jordan, Clerk. Ogden Hiles, Chas. J. Hughes, Jr., L. R. Rogers, Counsel for Appellees.

(*Argument Commenced.*)

And on the eighteenth day of September, A. D. 1903, in the record of the proceedings of said Circuit Court of Appeals is an entry in said cause, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit, September Term, 1903.

FRIDAY, *September* 18, 1903.

No. 1927.

UNITED STATES MINING COMPANY, Appellant,
vs.
LEONIDAS M. LAWSON ET AL.

Appeal from the Circuit Court of the United States for the District of Utah.

This cause having been called for hearing in its regular order, on application of counsel the time for argument on behalf of appellant was enlarged one hour, argument was thereupon commenced by Mr. George Sutherland for appellant and continued by Mr. Ogden Hiles and Mr. Charles J. Hughes, Jr., for the appellees, and the hour for adjournment having arrived further argument was postponed until tomorrow morning.

(*Order of Submission.*)

And on the nineteenth day of September, A. D. 1903, in the record of the proceedings of said Circuit Court of Appeals is an order of submission in said cause, in the words and figures following, to-wit:

600 United States Circuit Court of Appeals, Eighth Circuit, September Term, 1903.

No. 1927.

SATURDAY, *September* 19, 1903.

UNITED STATES MINING COMPANY, Appellant,
vs.
LEONIDAS M. LAWSON ET AL.

Appeal from the Circuit Court of the United States for the District of Utah.

This cause having been called for further hearing argument was continued by Mr. Charles J. Hughes, Jr., for appellees and concluded by Mr. W. H. Dickson for appellant.

Thereupon, this cause was submitted to the Court on the transcript of record from said Circuit Court and the briefs of counsel filed herein.

(*Opinion.*)

And on the twenty-third day of November, A. D. 1904, an opinion of said Circuit Court of Appeals was filed in said cause, which said

opinion is omitted from this supplemental transcript of proceedings by direction of counsel for appellees.

601 *Decree.*

And on the twenty-third day of November, A. D. 1904, in the record of the proceedings of said Circuit Court of Appeals is a decree in said cause, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit, September Term, 1904.

No. 1927.

WEDNESDAY, *November* 23, 1904.

UNITED STATES MINING COMPANY, a Corporation, Appellant,
vs.
LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, JUNIOR, HEBER M. WELLS, ENOS A. WALL, THOMAS KEARNS and JUNIUS F. WELLS.

Appeal from the Circuit Court of the United States for the District of Utah.

This cause came on to be heard on the transcript of the record from the Circuit Court of the United States for the District of Utah, and was argued by counsel.

On Consideration Whereof, it is now here ordered, adjudged and decreed by this Court, that the decree of the said Circuit Court, in this cause, be, and the same is hereby, reversed with costs; and that the United States Mining Company, a corporation, have and recover against Leonidas M. Lawson, William J. Harvey, Edward Balbach, Junior, Heber M. Wells, Enos A. Wall, Thomas Kearns and Junius F. Wells the sum of Eight Hundred Fourteen and 15/100 Dollars for its costs in this behalf expended and have execution therefor.

It is further ordered that this cause be, and the same is hereby, remanded to the said Circuit Court with a direction to enter a decree for the complainant in conformity with the prayer of the bill of complaint.

November 23, 1904.

602 *Petition for Rehearing.*

And on the twenty-sixth day of December, A. D. 1904, a petition for a rehearing was filed in said cause, in the words and figures following, to-wit:

603 In the United States Circuit Court of Appeals for the Eighth Circuit.

In Equity. No. 1927.

UNITED STATES MINING COMPANY, a Corporation, Complainant and Appellant,

vs.

LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, JR., ENOS A. WALL, HEBER M. WELLS, THOMAS KEARNS, JUNIUS F. WELLS and THE IVANHOE MINING COMPANY, a Corporation, Defendants and Appellees, Petitioners.

Petition for a Rehearing.

To the Honorable United States Circuit Court of Appeals for the Eighth Circuit:

Your petitioners, the appellees in the above entitled cause, respectfully pray for an order directing a re-hearing and re-argument of the said cause upon the following grounds:

First. An obvious misapprehension of facts by the court,
604 which, if rightly apprehended and understood, must lead either to an affirmance of the decree of the circuit court, or to a different decision by this court favorable to the appellees.

Second. The total insufficiency of the argument heretofore offered by counsel for appellees, due to a failure on their part to anticipate that such misapprehension of facts could occur, and therefore a failure to anticipate some of the grounds which have really led to the decision of the court, and the fact that under the circumstances, such failure on the part of counsel is not without reasonable excuse.

And your petitioners respectfully ask for an attentive consideration of the paper and statement hereto annexed, in which an attempt is made to more fully state, and to support the grounds above mentioned, with such brevity, however, as the nature of this petition and the rule of the court requires, and they further pray that the above entitled cause be set down for re-argument before the court upon some day by it to be appointed.

And as in duty bound will ever pray.

OGDEN HILES,
CHARLES J. HUGHES, JR.,
LINDSAY R. ROGERS,
Counsel for Appellees, Petitioners.

We certify that, in our opinion, the foregoing petition for a rehearing is well founded.

OGDEN HILES,
CHARLES J. HUGHES, JR.,
LINDSAY R. ROGERS,
Counsel for Appellees, Petitioners.

605 *Grounds on which a Re-hearing and Re-argument is Asked.*

1. An obvious misapprehension of fact by the court, which, if rightly apprehended and understood, must lead to either an affirmance of the decree of the circuit court, or a different decision by this court favorable to the appellees. One of these mistakes of fact by the court is evidenced by its statement commencing on line 35, page 2, of the printed opinion, in these words: "The southerly side lines of the Kempton, and the southerly end line of the Ashland are in part co-incident with the northerly sidelines of the Old Jordan and Mountain Gem, and the greater part of the width of the apex of the limestone is south of these dividing lines and within the surface boundaries of the Old Jordan and Mountain Gem."

A glance at any surface map of either appellant or appellees will prove, that the Old Jordan's northerly side line is not in any part of it within the disputed territory coincident, or parallel with the southerly side line of the Kempton, but to the contrary both the northerly and southerly side lines of both the Kempton and Old Jordan are practically co-incident or parallel throughout the area of disputed apex of the broad lode so-called, or in other words, the Old Jordan within such disputed area, lies directly on top, so to speak, of the entire part of such broad apex in dispute, therefore the "greater part of the width of the apex" does not lie south of Kempton ground, but lies within that ground, as well as in Old Jordan. About this fact there can be no dispute because the evidence of both appellant and appellees proves it as above stated.

An examination of any map will show that the north side line of the Old Jordan intersects the south side line of the Kempton about seventy-five feet southeasterly from corner No. 3 of the Kempton claim, passes entirely across the claim and for a considerable distance lies north of the north side line of the Kempton claim, but re-crosses the north side line and passes out over the westerly end line near the northwest corner, No. 1, of the claim, and for the entire distance indicated being more than eight hundred feet in length—
606 the entire northerly side line of the Old Jordan claim is laid upon and across prior patented claims. The south side line of the Jordan crosses the south side of the Kempton about fifty feet northerly of post No. 4 of the Kempton claim, and traverses the Kempton, Ashland and Ashland No. 2 claims for a distance of over 500 feet for which distance the entire width of said Jordan claim is absorbed by and included within the prior patents of the Kempton, Ashland and Ashland No. 2 claims, excepting a small fraction along the north line, which is included within the Northern Light; also an older patent.

2. Another mistake of fact which is material to the decision is evidenced by the opinion of the court, commencing on line 32, page 2, of the printed opinion in these words:

"The apex of a stratum of limestone, the strike of which is in a southwesterly, and northeasterly direction, is *longitudinally bisected* or divided by the Old Jordan, Mountain Gem, Kempton and Ashland."

The erroneous conception of fact in the foregoing statement consists in supposing that the Ashland claim bisects the stratum of limestone *longitudinally*, whereas the fact is, the Ashland claim is laid directly *across* the limestone stratum, or at right angles to its strike, and bisects it *laterally and not longitudinally*, as stated in the opinion. This error may be accounted for and explained by the consideration, that the opinion states an additional and co-relative mistake of fact, wherein it says that "the strike of which (the limestone stratum) is in a southwesterly and northeasterly direction," whereas the fact is that the strike of the limestone stratum is east and west. The maps of both parties which show the underground works, prove that the United States west drift, and all the east and west drifts of defendants follow the strike of the limestone stratum east and west.

The "tunnel runs approximately on the strike of the lode." Testimony of Holden, Record page 377.

"The beds have an east and west magnetic strike." Holden, Record, p. 338.

607 The materiality of, and the necessity to a correct decision, of having a true understanding of this fact, as we humbly conceive, consists in this, that if the Ashland claim does as is the fact, and as all the evidence proves, bisect or cross at right angles, the broad lode so-called, then the Ashland claim, being the older title by patent, and that part of the apex having been expressly excluded in favor of the Ashland, in both the Old Jordan and Mountain Gem patents, the former claim would be entitled to a decision in its favor for all that part of the broad apex which lies between its side lines, and to follow the same on its dip extralaterally between those side lines. In such case on well established principles, the side lines of the Ashland claim are its end lines in respect of length of lode to which it would be entitled. These mistakes of fact necessarily lead to a mistake of the law applicable. For the law which is applicable must vary according to the facts.

Again, continuing at line 40, page 2, the opinion goes on to say: "The lime stone is from 100 to 200 feet in width, is confined between well defined walls of quartzite, dips northwesterly at an angle of about 30 degrees, passes beyond the northerly side lines of the Old Jordan and Mountain Gem and *extends on its dip beneath the surface through the Kempton*, Ashland, etc." And thus as a necessary sequence of the error, the Kempton is made to appear to be situated wholly north of the north side line of the Jordan claim, which if true, would give strong color to the claim of extralateral rights attributed to the Jordan claim beneath and beyond the surface boundaries of the Kempton claim, but which we think in no sense can apply, as the lines of the claims really exist, because if we assume that the court is correct in its conclusion that a prior location should prevail against a prior patent of a junior location, then under the most favorable construction of this rule, the Old Jordan would take the entire lode on its dip only easterly from the point upon the southerly side line of the Kempton, at which the southerly side line of the Old Jordan claim enters and is thence absorbed by the Kempton claim,

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and from which point it will be seen that if a line be drawn
608 parallel to the end lines of the Jordan claim across the Kempton claim and extended in the direction of the dip of the lode it would fall more than one hundred and fifty feet easterly of the valuable portions of the ore body in dispute. The question then would remain, what if any, extralateral rights attach to the original location of the Mountain Gem before and at the time of the issuance of patent in 1898, for we assume that it will not be contended that the patent added *any extralateral rights not inherent in the original notice of location.*

These mistakes of fact, locate the Old Jordan as much as 200 feet south of where it actually exists, and leaves all that width of apex in Jordan ground in non-conflict with both the Kempton and Ashland claims. The result is to ignore the fact proved by the patents in evidence, that all that width of apex in Kempton and Ashland ground has been expressly excluded and excepted in the Jordan and Mountain Gem patents in favor of both the Kempton and Ashland patentees, and their successors in title; and, therefore, there is a failure to give effect to such exceptions, which result is contrary to the decision of the Supreme Court in Argentine *v.* Terrible, 122 U. S. 478-486. In that case the Supreme Court gave effect to the exception in the patent in these words:

"The defendant relied on the trial upon patents of the United States issued for its several claims, but those patents contain an exception which would also seem to exclude its pretensions. It is as follows, after the *habendum* clause, 'excepting and excluding, however, all that portion of said surface ground embraced by mineral survey No. 254 of the Adelaide mining claim, and also excepting and excluding all veins, lodes or deposits, the tops or apexes of which lie inside of the exterior lines of said Adelaide survey at the surface extended down vertically, or which have been therein discovered and developed.'"

Argentine Co. *vs.* Terrible Co., 122 U. S. 478-486.

Here the same exclusion and exception exists in both the
609 Jordan and Mountain Gem patents in favor of both the Kempton and Ashland claims. In the Argentine-Terrible case, the priority of the Adelaide location was fortified and made effectual by the exception in the patented grant.

In our case the legally presumptive priority of the Kempton and Ashland locations which arises from the seniority of their patents, is fortified and made effectual and conclusive by the express exclusion and exception in the Jordan and Mountain Gem patents of the apex of the lode which exists within Kempton and Ashland exterior surface boundaries, in favor of the patentees of the latter claims.

Under these misapprehensions of the facts, concerning the location of the claims upon the surface, and the part of the apex which is covered by these conflicting claims, covered by these senior and junior patents, the decision of this court has overthrown and cancelled the express exceptions in a grant of the premises, by the United States in favor of the appellees and their predecessors in title. It is

needless to argue that that was not the case which was presented to, and decided by the circuit court. If it were true that "the greater width of the limestone is south of these dividing lines and within the surface boundaries of Old Jordan and Mountain Gem," there would be justification for the decision, because in that case there would be no substantial conflict of apex area on which the exclusions and exceptions in the Jordan and Gem patents could have fit operation, but as before shown, all of the apex above these ore bodies in dispute, which is covered by the Jordan, is covered also by the Kempton and Ashland patents. The Mountain Gem is so cut by exclusions and exceptions in its patent in favor of the Ashland, the Kempton, the Jordan and the Excelsior claims, as that nothing of it remains but a small triangular fraction without any east end line whatever. Its assumed east end line exists entirely on ground which has been excluded in its patent to the other claims above mentioned. See defendants' map, Exhibit 20.

The excuse for not arguing these matters before the court at the hearing lies in the fact that we could not anticipate that such
610 erroneous impressions of the evidence might arise. There was nothing suggested at the oral argument of the cause in this court, as we now remember it, to justify the belief or impression that the southerly lines of the Kempton and Ashland are nearly or at all co-incident with the northerly side lines of the Jordan and Mountain Gem, and we supposed that the court had fully in mind the conflicting apex areas in the several claims, which were the subject of the several exclusions and exceptions in the Jordan and Gem patents, and that the court would in its decision give full effect to those exclusions and exceptions.

This it now seems it has not done, because it was impossible to do so, on its statement of the facts as before set forth.

There is some further excuse as we think, in the consideration, that whilst the appellant was allowed an extension of time at the oral argument we were restricted to the ordinary time allowed by the rule of the court.

When we reflect that he who asserts an extralateral right under the mining law, has the burden cast on him of establishing its existence, it is a just rule whether he be plaintiff or defendant, appellant or appellee, that he should have an equal time with his opponent, if not the opening and closing of the argument as well.

A motion for a re-hearing does not require, and neither the rule of the court, nor the pressure under which it is made will permit elaboration; but we respectfully ask whether the above suggestions do not justify the court in ordering a re-argument and a further discussion upon the facts such as the court has not yet heard, and designed to show that a true apprehension and comprehension of the facts above indicated, must result in a different decision.

Respectfully submitted,

OGDEN HILES,
CHARLES J. HUGHES, JR.,
LINDSAY R. ROGERS,
Counsel for Appellees, Petitioners.

(Endorsed:) Filed Dec. 26, 1904, John D. Jordan, Clerk.

611 (*Order Denying Petition for Rehearing.*)

And on the seventh day of March, A. D. 1905, in the record of the proceedings of said Circuit Court of Appeals is an order denying the petition for a rehearing in said cause, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit, December Term, 1904.

No. 1927.

TUESDAY, *March* 7, 1905.

UNITED STATES MINING COMPANY, Appellant,
vs.
LEONIDAS M. LAWSON ET AL.

Appeal from the Circuit Court of the United States for the District of Utah.

This cause came on this day to be heard upon the petition for a rehearing filed by Counsel for the Appellees.

On Consideration Whereof, it is now here ordered by this Court, that said petition for a rehearing of this cause be, and the same is hereby denied.

March 7, 1905.

612 (*Clerk's Certificate.*)

United States Circuit Court of Appeals, Eighth Circuit.

I, John D. Jordan, Clerk of the United States Circuit Court of Appeals for the Eighth Circuit, do hereby certify that the foregoing fifteen pages contain, full, true and complete copies of all the pleadings, record entries and proceedings, (except the transcript of the record from the Circuit Court of the United States for the District of Utah and the opinion of said Circuit Court of Appeals), in a certain cause in said Court wherein the United States Mining Company, a corporation, is Appellant, and Leonidas M. Lawson, *et al.*, are Appellees, as full, true and complete as the originals of the same now remain on file and of record in my office.

I do further certify that on the twenty-fifth day of April, A. D. 1905, a mandate was issued out of said Circuit Court of Appeals, directed to the judges of the Circuit Court of the United States for the District of Utah.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of said Circuit Court of Appeals, at office in the City of St.

Louis, Missouri, in the Eighth Circuit, this fifth day of May, A. D. 1905.

[Seal United States Circuit Court of Appeals, Eighth Circuit.]

JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

613 In the United States Circuit Court of Appeals, Eighth Circuit.

No. 1927.

UNITED STATES MINING COMPANY, Plaintiff,
vs.
LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, JR., ENOS A. WALL, HEBER M. WELLS, THOMAS KEARNS, JUNIUS F. WELLS, and IVANHOE MINING COMPANY, a Corporation, Defendants.

It is hereby stipulated and agreed by and between the solicitors for the parties plaintiff and defendant in the above entitled cause that certified transcript of record in said case, now on file in the office of the Clerk of the Supreme Court of the United States, in the matter of the application of said Lawson, and the other defendants, for a writ of certiorari from said Supreme Court to said Circuit Court of Appeals, can and shall be taken as a return by the said Circuit Court of Appeals to the writ of certiorari heretofore, on the 17th day of October, 1905, issued by the said Supreme Court to said Circuit Court of Appeals in said matter; and that a certified copy of this stipulation may be sent up by the Clerk of said Circuit Court of Appeals as his return to said writ of certiorari.

DICKSON, ELLIS,
ELLIS & SCHULDER,
Solicitors for Plaintiff.
OGDEN HILES,
CHAS. C. DEY,
Solicitors for Defendants.

Salt Lake City, Utah, October 21, A. D. 1905.

(Endorsed:) No. 1927. U. S. Circuit Court of Appeals, Eighth Circuit. United States Mining Company *vs.* Leonidas M. Lawson *et al.* Stipulation. Filed Oct. 26, 1905, John D. Jordan, Clerk.

614 UNITED STATES OF AMERICA, *ss:*

[Seal of the Supreme Court of the United States.]

The President of the United States of America to the Honorable the Judges of the United States Circuit Court of Appeals for the Eighth Circuit, Greeting:

Being informed that there is now pending before you a suit in

which United States Mining Company is appellant and Leonidas M. Lawson, William J. Harvey, Edward Balbach, Jr., Heber M. Wells, Enos A. Wall, Thomas Kearns, and Junius F. Wells, are appellees, No. 1927, which suit was removed into the said Circuit Court of Appeals by virtue of an appeal from the Circuit Court of the United States for the District of Utah, and we, being willing for certain reasons that the said cause and the record and proceedings therein should be certified by the said Circuit Court of Appeals and removed into the Supreme Court of the United States, do
615 hereby command you that you send without delay to the said Supreme Court, as aforesaid, the record and proceedings in said cause, so that the said Supreme Court may act thereon as of right and according to law ought to be done.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, the 17th day of October, in the year of our Lord one thousand nine hundred and five.

JAMES H. McKENNEY,
Clerk of the Supreme Court of the United States.

616 [Endorsed:] File No. 19,765. Supreme Court of the United States. No. 264. October Term, 1905. Leonidas M. Lawson *et al., vs.* United States Mining Company. Writ of Certiorari. Filed Oct. 26, 1905. John D. Jordan, Clerk.

Return to Writ.

UNITED STATES OF AMERICA, *Eighth Circuit, ss:*

In obedience to the command of the within writ of certiorari and in pursuance of the stipulation of the parties, a full, true and complete copy of which is hereto attached. I hereby certify that the transcript of record furnished with the application for a writ of certiorari in the case of the United States Mining Company, Appellant, *v.* Leonidas M. Lawson, *et al.*, is a full, true and complete transcript of all the pleadings, proceedings and record entries in said cause.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of said Circuit Court of Appeals, at office in the City of St. Paul, Minnesota, in the Eighth Circuit, this twenty-eighth day of October, A. D. 1905.

[Seal United States Circuit Court of Appeals, Eighth Circuit.]

JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

616½ [Endorsed:] File No. 19,765. Supreme Court U. S. October Term, 1905. Term No. 264. Leonidas M. Lawson *et al.*, Petitioners, *vs.* United States Mining Co. Writ of Certiorari and return. Filed Oct. 31st, 1905.

617 *Stipulation.*

In the Supreme Court of the United States.

No. 264. October Term, 1905.

LEONIDAS M. LAWSON ET AL., Petitioners,
vs.
UNITED STATES MINING COMPANY, a Corporation, Respondent.

It is hereby agreed between the parties in the above entitled cause that the Clerk of this court shall, and he hereby is respectfully requested, before printing the record in this cause from the Circuit Court of Appeals, to make or cause to be made therein corrections of the following verbal errors therein, now appearing in the printed record from said Circuit Court of Appeals, that is to say:

On page 8, line 23, change "doscovery" to "discovery."

On page 10, line 32, change "in" to "is."

On page 17, line 17, change "at" to "or."

On page 18, line 7, strike out the word "bearing"; and on same page, line 24, change "of" to "or."

On page 19, line 24, change "of" to "or."

On page 23, line 15, strike out the word "the" embraced in brackets, thus "the."

On page 23, line 25, strike out the word "bearing."

On page 24, line 26, strike out the word "bearing." On same page, line 40, change "od" to "of."

On page 25, line 17, strike out the word "bearing." On same page, line 26, change "in" to "is."

On page 27, line 11, change "ans" to "and."

On page 29, line 30, change "of" to "or."

618 On page 31, line 4, change "of" to "or."

On page 37, line 27, change "un" to "in."

On page 39, line 38, change "ot" to "or."

On page 40, line 13, strike out word "that" in brackets, thus (that).

On page 44, line 25, change "dodumentary" to "documentary"; and on same page, line 31, change "in" to "is."

On page 49, line 8, change "at" to "as." On same page, line 9, change "ot" to "of."

On page 50, line 21, change "Harmann" to "Hermann."

On page 54, line 35, change "paex" to apex." On same page, line 38, change "underly" to "underlie."

On page 74, line 8, change "laboe" to "labor."

On page 87, line 2, change "filed" to "field."

On page 90, line 40, bottom of page, change "sta-ding" to "standing."

On page 98, line 12, strike out word "there," in brackets, thus (there). On same page, line 27, correct word "others" so as to read "other."

On page 112, line 20, change word "beaneath" to "beneath."

On page 135, line 23, change "to" to "of."
On page 145, line 18, strike out word "to" in brackets, thus (to).
On page 146, line 2, change word "eflifient" to "efficient."
On page 146, line 36, change word "theis" to "this."
On page 171, line 5, correct the word "withdraw" to "withdrew."
On page 173, line 7, correct the word "placed" to "place."
On page 183, line 41, correct word "then" to "them."
On page 184, line 4, strike out word "three" in brackets, thus (three). On same page, line 6 from bottom, strike out word "to" in brackets, thus (to).
619 On page 189, line 1, correct "veet" to "feet."
On page 191, line 41, correct word "vosible" to "visible."
On page 193, line 31, correct word "narking" to "marking."
On page 203, line next to last at bottom of page, correct word "thins" to "this."
On page 204, line 32, correct word "think" to "thinking." Also, on last line, same page, strike out the word "it" in brackets thus (it).
On page 211, next to last line at bottom of page, correct word "fissyred" to "fissured."
On page 213, line 29, strike out word "and" in brackets, thus (and).
On page 215, line 44, near bottom of page, strike out the word "the" in brackets, thus (the).
On page 217, line 1, correct word "cinfing" to "confining."
On page 218, line 16, correct word "it" in brackets, to "is."
On page 220, line 16, correct "3412" to "412."
On page 225, line 1, correct word "corssing" to "crossing." Also on same line, correct the word "working" to "work"; and the word "run" on same line to "running." Also, on line 2, same page, correct the word "fron" to "from." Same page, line 23, change "in," in brackets, to "is."
Also on line 15, same page, correct the word "tunnell" to "tunnel."
On page 226, line 21, correct the word "attantion" to "attention." Same page, line 18, change "bank" in brackets to "back."
Page 228, line 21, change "limestones" to "limestone."
On page 238, line 9, correct word "these" to "there."
On page 248, line 28, correct word "at" to "or."
On page 249, line 29, correct by making word "is" read "it." And on same page, line 13, change "unvroken" to "unbroken."
On page 253, line 26, correct "hsve" to "have."
620 On page 254, line 31, correct "dicernable" to "discernible"; and on line 37, same page, correct "ot" to "or."
On page 252, line 4, change "you" to "your"; and on next line change "disision" to "division"; same page, change "dowin" to "down"; also same line, "worked" to "workings."
On page 255, line 9, correct "to" to "so."
On page 256, line 24, correct "jnow" to "now."
On page 279, line 11, correct word "described" to "describe."
On page 298, line 16, correct "disrection" to "direction"; and on same page, line 26, correct "trun" to "turn"; same page, line 10 from bottom, change "structor" to "structure."

On page 306, line 10, correct "there" to "these."
On page 307, line 29, correct "evidinet" to "evident."
On page 308, line 20, correct "suspision" to "suspicion."
On page 312, line 8, correct "quas" to "was"; and on same page, line 45, strike out words in brackets "belong to the," thus (belong to the).
On page 321, line 3, correct by substituting the word "law" for the word "long"; and on same page, line 17, correct by inserting word "quite" instead of "qyite."
On page 323, line 16, correct "witnesses" to "witnessed."
On page 339, line 17, correct "horozintal" to "horizontal."
On page 340, line 37, correct "generaly" to "generally."
On page 341, line 17, correct "marblized" to "marbleized."
On page 343, line 37, correct "with" to "which."
On page 350, line 41, correct "than" to "then."
On page 354, line 17, correct "chow" to "show."
On page 368, line 1, correct "sustem" to "system."
On page 372, line 36, correct "galana" to "galena."
On page 373, line 38, correct "dups" to "dips."
On page 376, line 38, correct "heasitate" to "hesitate."
On page 380, line 36, correct "nujbered" to "numbered"; and on last line of same page correct "on" to "oh"; same page, line 621 17, change "any" to "at."
On page 384, line 12, correct "then" to "than."
On page 419, line 25, correct "Hall" to "Hill"; also the last word on same page from "lose" to "lode."
On page 421, line 23, strike out "ther."
On page 422, line 46, correct "fissyres" to "fissures."
On page 424, line 42, correct "states" to "state."
On page 425, line 7, correct "monoralized" to "mineralized."
On page 427, line 44, correct "varning" to "running."
On page 432, line 2, correct "poace" to "place."
On page 433, line 24, correct "undertakin" to "undertaken."
On page 437, line 31, correct "supplied" to "split."
On page 451, line 31, correct "correcly" to "correctly."
On page 455, line 24, correct "co-called" to "so-called."
On page 459, line 24, correct "Kemptong" to "Kempton."
On page 464, line 24, change "districy" to "district."
On page 472, line 36, strike out "wo."
On page 474, line 25, correct "prectically" to "practically."
On page 480, line 8, strike out word "stop" in brackets.
On page 481, line 6, correct "metamporphism" to "metamorphism." Also on page 481, line 7, correct "graind" to "grain"; same page, line 28, change "raod" to "road."
On page 482, line 7, correct "walk" to "wall."
On page 485, line 3, correct "disrection" to "direction."
On page 486, line 20, correct "genisis" to "genesis."
On page 488, lines 1 and 2, strike out words "we offer," in brackets, thus (we offer), and in line 2, correct word "and" to "an." In line 4 correct word "proff" to "proof." On same page, line 31, correct "marshall" to "marshal."

On page 498, line 31, correct "mantioned" to "mentioned."
On page 508, line 5, correct "these" to "there"; on same page, line 30, change "looed" to "looked"; on same page and line change "was" to "what."
622 On page 509, line 2, correct "that" to "than."
On page 511, line 43, correct "sother" to "south."
On page 512, line 21, correct "talc" to "talus."
On page 520, line 14, correct "that" to "what."
On page 521, line 18, correct "appaargance" to "appearance."
On page 524, line 2, correct "does" to "goes"; also "directio" to "direction."
On page 525, line 5, correct "sit" to "sir."
On page 526, line 26, correct "unmistakeably" to "unmistakably."
On page 528, line 9, correct "boardhing" to "boarding."
On page 542, line 44, correct "disirous" to "desirous."
On page 549, line 29, correct "subpoenae" to "subpoena."
On page 550, line 1, correct "E. Nos" to "Enos."
On page 552, line 38, correct "unmistakeably" to "unmistakably."
On page 554, line 43, strike out following words in brackets (lode is).
On page 556, line 7, strike out word "with" in brackets, thus (with).
On page 558, line 32, correct "sire" to "side."
On page 560, line 12, correct "prophyry" to "porphyry."
On page 560, line 14, correct "confermable" to "conformable."
On same page, line 14, correct "clein" to "claim."
On page 561, line 35, strike out the word "further."
On page 562, line 7, change "varibus" to "various"; on line 13, same page, strike out "the."
On page 564, line 8, strike out "ye." Also, on line 11, page 564, change "and" to "an"; same page, line 25, change "excepting" to "exception." Also, on line 45, same page, correct "think" to "thing."
On page 566, line 16, correct "opper" to "upper."
On page 575, line 3, correct "of" to "to."
623 Also any other typographical errors therein appearing, not herein specified.

Salt Lake City, Utah, November 27, 1905.

CHARLES J. HUGHES, JR.,
CHARLES C. DEY,
OGDEN HILES,
Counsel for Petitioners.
W. H. DICKSON,
EDWARD M. ALLISON, JR.,
Counsel for Respondents.

624 [Endorsed:] File No. 19,765. Supreme Court U. S. October Term, 1905. Term No. 264. Leonidas M. Lawson *et al.*, Petitioners, *vs.* United States Mining Co. Stipulation to correct record. Filed Dec. 11, 1905.

STIPULATION AND EXHIBITS.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 190[redacted]

No. [redacted]2

LEONIDAS M. LAWSON ET AL., PETITIONERS,

vs.

UNITED STATES MINING COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

PETITION FOR CERTIORARI FILED MAY 13, 1905.
CERTIORARI AND RETURN FILED OCTOBER 31, 1905.

(19,765.)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1905.

No. 264.

LEONIDAS M. LAWSON ET AL., PETITIONERS,

vs.

UNITED STATES MINING COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

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JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., MARCH 26, 1906.

In the Supreme Court of the United States.

No. 264, October Term, 1905.

LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, Jr., Enos A. Wall, Thomas Kearns, Heber M. Wells, Junius F. Wells, and Ivanhoe Mining Company, a Corporation, Petitioners,
vs.
UNITED STATES MINING COMPANY, Respondent.

It is hereby stipulated and agreed by and between the solicitors for parties plaintiff and defendant in the above entitled action, that each and all of the exhibits which were put in evidence by the respective parties plaintiff and defendant in the above entitled cause at the trial in the United States Circuit Court, and which were used in the argument in the United States Circuit Court of Appeals or such of either of them as either of the respective parties shall desire to use in the argument of the above entitled cause in the Supreme Court of the United States upon the certiorari heretofore issued by the said Supreme Court to said Circuit Court of Appeals in this cause, shall be used and referred to the same as if they were attached to the transcript of the record sent up from said Circuit Court of Appeals to the said Supreme Court. The said exhibits, maps, and documents being now in the possession of the Clerk of the United States Circuit Court for the District of Utah.

OGDEN HILES,
CHARLES C. DEY, *Solicitors for Petitioners.*
GEORGE SUTHERLAND,
WALDEMAR VAN COTT,
EDWARD M. ALLISON, JR.,
DICKSON, ELLIS, ELLIS & SCHULDER,
Solicitors for Respondents.

Salt Lake City, Utah, October 21, A. D. 1905.

[Endorsed:] File No. 19,765. Supreme Court U. S. October Term, 1905. Term No. 264. L. M. Lawson *et al.*, petitioners, *vs.* U. S. Mining Co. Stipulation of counsel as to use of exhibits. Filed March 17", 1906.

COMPLAINANTS' EXHIBITS.

Exhibit
A Patent Northern Light—George Hardie
B Deed—Hardy to U. S. M. Co. Northern Light and Fairview
C Patent—to Hardie of Fairview
D Patents to O. J. & G. M. Co.—Jordan Extension
E Deed O. J. & G. M. Co. to Hight
F Deed—Hight to U. S. M. Co.
G Location notice Grizzly

H Deed Merrill *et al.* to May—Grizzly
J Deed May to Johns—Grizzly
K Deed Johns to Tracey
L Deed Tracey to Hardie
M Deed Hardie to U. S. M. Co.
N Certificate Labor Mayberry
O do. do.
O–1 do. do.
P do. do.
Q Surface claim map of complainant
R Opening map of complainant
S General map of complainant

On Rebuttal.

T Old Jordan Surface Map
U Mineral entry papers Old Jordan
V Location notice Old Jordan
W Abstract deed Holden to O. J. & M. Co.—Jordan, O. J. M. Co. to O. J. & G. Co.
X O. J. & G. to Hight—Hight to U. S. M. Co. (X^1–X^2)
Y Mineral entry papers Mountain Gem lode
Z Location notice Mountain Gem

Exhibit
AA Deed O. J. & G. Co. to Hight—Hight to U. S. M. Co.
BB Map U. S. M. Co. Old Jordan-Niagara-Telegraph
CC Map Kempton Upper & Intermediate Tunnels
DD Neptune Tunnel Level—Kempton second level
EE No. 1 Tunnel Level
FF No. 2 Tunnel Level
GG Map Utah Tunnel Level
HH Map Section 4
JJ Map sections 1, 2 and 3
KK Map Ore bodies west of Emma
LL Tracing map of Fissures in Kempton-Neptune Tunnel
MM Certificate of Assays by R. H. Officer
NN Diagram map by O. A. Palmer (Not sent)
OO Map section five north side line Jordan
RR Letter of J. W. Neill to U. S. Min. Co.
SS Report J. W. Neill to U. S. Co.

DEFENDANT'S EXHIBITS.

Exhibit
1 Patent to George Hearst—Ashland
2 Power Attorney Hearst to Chambers
3 Deed Hearst to Colbath
4 Deed Colbath to Chambers
5 Deed Colbath to Haggin
6 Deed Colbath to Hearst

7 Deed Hearst to Ivanhoe Co.
8 Deed Haggin to Ivanhoe Co.
9 Deed Chambers to Ivanhoe Co.
10 Lease Bemis to Jensen
11 " do.
12 " do.
13 Assignment lease Bemis to Wall
14 Patent to B. M. Du Rell Kempton Mine
15 Deed Schoenberg to Scott—Scott to Bennett
15-a Bennett to Geokin
15a1 Deed Du Rell to Haggin
15-b Deed Haggin to Balbach
15-c Deed Haggin to Donnell
15-d Deed Colbath to Du Rell
15-e Deed Donnell to Harvey
16 Lease Harvey to Wells
17 Agreement between Wells and Wall
18 Deed Wells to Wall
19 Claim map of defendant
20 Surface map of defendant
21 Underground map of defendant
25 Assignment Lease J. F. Wells to H. M. Wells
26 Agreement between Harvey & Wall
27 Copy deed Maxwell to Scott
28 Copy deed Shaughnessy to Haggin
29 Copy deed Maxwell to Scott
Photos. No. 1, 2, 3, 4, 5, 6
31 Assay certificate of Ellis
32 Section map of defendant
33 Section map of defendant
Blue print of Bingham camp from Land Office Reports &c.

Ex. 1.

General Land Office No. 1487. Mineral Certificate No. 133.

THE UNITED STATES OF AMERICA.

[Vignette.]

To all to whom these presents shall come, Greeting:

Whereas, In pursuance of the act of Congress approved July twenty-sixth, eighteen hundred and sixty-six, entitled "An Act granting the right of way to ditch and canal owners over the public lands, and for other purposes;" the act amendatory thereof, approved July ninth, eighteen hundred and seventy; and the act approved May tenth, eighteen hundred and seventy-two, entitled "An Act to promote the development of the mining resources of the United States," there have been deposited in the General Land Office of the United States the Plat and Field Notes of survey of the claim of George Hearst upon the Ashland Lode accompanied by

the Certificate of the Register of the Land Office at Salt Lake City, in the Territory of Utah whereby it appears that in pursuance of said acts of Congress George Hearst did, on the 6th day of May A. D. 1875, enter and pay for said mining claim or premises, being Mineral Entry No. 133, in the series of said Office, designated by the Surveyor General as Lot No. 67, embracing a portion of the unsurveyed public domain in the West Mountain Mining District in the County of Salt Lake and Territory of Utah, in the District of Lands subject to sale at Salt Lake City, embracing two (2) acres and seventy-one hundredths ($\frac{71}{100}$) of an acre of land more or less and, according to the returns on file in the General Land Office, bounded, described, and platted as follows, with magnetic variation at sixteen (16) degrees, thirty (30) minutes East, to-wit:

Beginning at corner No. 1, a Pine Post 6 x 6 inches in size, in mound of stones, marked "U. S. W. C. No. 1, L. 67" from which U. S. Mineral Monument No. 1 bears North eighty (80) degrees, twenty-eight (28) minutes East, at the distance of eleven hundred and eighty-six (1186) feet, corner No. 3, of survey No. 55, patented to Benjamin M. Du Rell *et al.* with their claim upon the Kempton Mine, bears North fifty-nine (59) degrees East, at the distance of ninety-five (95) feet: Thence from said corner No. 1, north fifty-four (54) degrees West seventy (70) feet to a point on southerly boundary of survey No. 59, made for the Neptune Mine, from which Post No. 3, of said survey No. 59 bears south seventy-six (76) degrees thirty (30) minutes West, at the distance of ninety-seven (97) feet, ninety (90) feet to the Ashland lower tunnel, one hundred and seventy (170) feet to a point on southerly boundary of said survey No. 55, from which post No. 3, of said survey No. 55, bears south, seventy-five (75) degrees thirty (30) minutes East, at the distance of two hundred and twenty-six (226) feet, two hundred (200) feet to Corner No. 2 a Pine Post 6 x 6 inches in size, in mound of stones, marked "U. S. W. C. No. 2, L. 67:" Thence north thirty-six (36) degrees East, one hundred and twenty-one (121) feet to the southwesterly boundary of survey No. 53, patented to George Hardie with his claim upon the Northern Light Lode, from which Corner No. 1, of said survey No. 53, bears south sixty-five (65) degrees East, at the distance of eighty-seven (87) feet, one hundred and ninety-three (193) feet to Corner No. 3, a Pine Post 6 x 6 inches in size, marked "U. S. W. C. No. 3, L. 67" on northerly boundary of said survey No. 55, from which corner No. 1, of said survey No. 55, bears North seventy-five (75) degrees, thirty (30) minutes West, at the distance of seventy-seven (77) feet: Thence from said corner No. 3, North twenty-eight (28) degrees east, twenty (20) feet to northerly boundary of said survey No. 59, from which Post No. 7, of said survey No. 59, bears north seventy-six (76) degrees, thirty (30) minutes east, at the distance of three hundred and thirteen (313) feet, one hundred and twenty-five (125) feet to the southerly boundary of survey No. 52, made for the Grizzly Mine, three hundred and thirty (330) feet to top of Ridge, five hundred and eighty-one (581) feet to northern boundary of said survey No. 52, from which corner No. 3 of said survey No. 52, bears north fifty-four (54) degrees east,

at the distance of four hundred and thirty (430) feet, seven hundred and thirty-two (732) feet to Prospect dump, eleven hundred and seventy-one (1171) feet to northeasterly boundary of said survey No. 53, from which Post No. 4, of said survey No. 53, bears south sixty-five (65) degrees East, at the distance of twenty (20) feet twelve hundred and seven (1207) feet to corner No. 4, a Pine Post 6 x 6 inches in size in mound of stones, marked " U. S. W. C. No. 4, L. 67 " from which corner No. 4 of said survey No. 53, bears south at the distance of thirty-nine (39) feet: Thence from said Corner No. 4, of Lot No. 67, south fifty-four (54) degrees East forty-seven and three tenths ($47\frac{3}{10}$) feet to Post No. 7, a Pine Post 2 x 4 inches in size in mound of stones, marked " U. S. L. 67, P. 7 " on westerly boundary of the survey made for the Orphan Boy Mining claim, from which the southwesterly corner of the survey made for the said Orphan Boy mining claim, bears south eighteen (18) degrees forty-five (45) minutes west, at the distance of seven hundred and eight and four tenths ($708\frac{4}{10}$) feet, two hundred and two (202) feet to corner No. 5, a Pine Post 6 x 6 inches in size in mound of stones marked " U. S. W. C. No. 5, L. 67 : " Thence south twenty-eight (28) degrees West, two hundred and twenty (220) feet to the northeasterly boundary of said survey No. 52, from which corner No. 3, of said survey No. 52, bears north thirty-six (36) degrees West, at the distance of thirteen (13) feet, six hundred and forty-three (643) feet to the south-westerly boundary of said survey No. 52, from which corner No. 4, of said survey No. 52 bears North fifty-four (54) degrees East at the distance of three hundred and eighty-three (383) feet, six hundred and seventy-one and five tenths ($671\frac{5}{10}$) feet to Post No. 9, a Pine Post 2 x 4 inches in size in mound of stones, marked " U. S. L. 67, P. 9 " being on the southerly boundary of the said survey made for the Orphan Boy Mining claim, from which Post No. 8, 2 x 4, inches in size, marked " U. S. L. 67, P. 8 " in mound of stones, at the south-westerly corner of said survey made for the Orphan Boy mining claim bears north seventy-one (71) degrees, fifteen (15) minutes West, at the distance of forty (40) feet six hundred and eighty (680) feet to top of Ridge, nine hundred and ninety-three (993) feet to northerly boundary of said survey No. 59, from which Corner No. 7 of said survey No. 59, bears north seventy six (76) degrees, thirty (30) minutes East at the distance of forty-eight (48) feet, one thousand and eighty (1080) feet to northwesterly boundary of said survey No. 55, from which Post No. 7 of said survey No. 55, bears north seventy one (71) degrees thirty (30) minutes east, at the distance of fifteen (15) feet, eleven hundred and ninety-three (1193) feet to corner No. 6, a Pine Post 6 x 6 inches in size in mound of stones marked " U. S. W. C. No. 6, L. 67 ; " Thence South thirty six (36) degrees West, one hundred and twenty-two (122) feet to southerly boundary of said survey No. 59, from which corner No. 3, of said survey No. 59, bears south seventy-six (76) degrees thirty (30) minutes West, at the distance of two hundred and six (206) feet, one hundred and thirty-eight (138) feet to the southwesterly boundary of said survey No. 55, from which corner No. 3, of said survey No. 55, bears south seventy-five (75) degrees thirty (30) minutes East, at the distance

of thirty-seven (37) feet, two hundred and seven (207) feet to the place of beginning containing two (2) acres and seventy one hundredths ($\frac{71}{100}$) of an acre of land more or less, the same being exclusive of any portion of the surface ground hereinbefore described, which is embraced by said surveys Nos. fifty three (53) and fifty-five (55) and the survey made for the said Orphan Boy Mining claim. It being the express intent and meaning of these presents to convey to the grantee herein Fourteen hundred (1400) linear feet of the said Ashland Lode: to wit, two hundred (200) linear feet south-westerly and twelve hundred (1200) linear feet north-easterly from Discovery Shaft on said Ashland Lode, as represented by yellow shading in the following plat:

(Here follows survey No. 31, plat of the claim of George Hearst, etc.)

Now know ye, That the United States of America, in consideration of the premises, and in conformity with said acts of Congress, have given and granted, and by these presents do give and grant, unto the said George Hearst and to his heirs, and assigns, the said mining premises hereinbefore described as Lot No. 67, embracing a portion of the unsurveyed public domain with the exclusive right of possession and enjoyment of all the land included within the exterior lines of said survey not herein expressly excepted from these presents, and of Fourteen hundred (1400) linear feet of the said Ashland vein, lode, ledge, or deposit for the length hereinbefore described throughout its entire depth, although it may enter the land adjoining, and also of all other veins, lodes, ledges, or deposits throughout their entire depth, the tops or apexes of which lie inside the exterior boundary lines of said survey at the surface extended downward vertically, although such veins, lodes, ledges, or deposits in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said survey: *Provided*, That the right of possession hereby granted to such outside parts of said veins, lodes, ledges, or deposits shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said survey at the surface, so continued in their own direction that such vertical planes will intersect such exterior parts of said veins, lodes, ledges, or deposits: *And provided further*, That nothing in this conveyance shall authorize the grantee herein, his heirs, or assigns, to enter upon the *surface* of a mining claim owned or possessed by another: To have and to hold said mining premises, together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereunto belonging, unto the said George Hearst and to his heirs, and assigns, forever, subject, nevertheless, to the following conditions and stipulations:

First. That the grant hereby made is restricted to the land hereinbefore described as Lot No. 67, with Fourteen hundred (1400) linear feet of the Ashland vein, lode, ledge, or deposit for the length aforesaid throughout its entire depth as aforesaid, together with all other veins, lodes, ledges, or deposits throughout their entire depth as aforesaid, the tops or apexes of which lie inside of the exterior lines of said survey as against all persons claiming under locations made upon such other veins, lodes, ledges or deposits subsequent to May 10, 1872, but subject to the right of other parties to follow any other vein or lode with its dips angles and variations legally held under a location made prior to such date.

Second. That the premises hereby conveyed, with the exception of the surface, may be entered by the proprietor of any other vein, lode, ledge, or deposit, the top or apex of which lies outside of the exterior limits of said survey, should the same in its downward course be found to penetrate, intersect, extend into, or underlie the premises hereby granted, for the purpose of extracting and removing the ore from such other vein, lode, ledge, or deposit.

Third. That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural,

manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water-rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts.

Fourth. That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted, involving easements, drainage and other necessary means to its complete development.

In testimony whereof, I, Ulysses S. Grant, President of the United States of America, have caused these letters to be made patent, and the seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the twenty-seventh day of September, in the year of our Lord one thousand eight hundred and seventy-five, and of the Independence of the United States the one hundredth.

[Seal United States General Land Office.]

By the President:

U. S. GRANT,
By D. D. CONE, *Secretary.*

Recorded, Vol. 17 Pages 227 to 233
Examined.

L. K. LIPPINCOTT,
Recorder of the General Land Office.

[Endorsed:] Ex. 1 def't J. W. C. Ashland Mine—George Hearst Recorded Mining Record Book H Pages 842-3-4-5-6 & 7 June 19th A. D. 1876 Edwin D. Woolley Recorder Salt Lake County Utah Def's Ex. 1 Filed in U. S. Circuit Court, District of Utah, Oct. 21, 1902 Jerrold R. Letcher, Clerk, by ——— ———, Deputy. Ex. 1 $4.50 Filed for Record June 13th 1876 at 10:40 a. m.

Ex. 14.

General Land Office No. 1220. Mineral Certificate No. 103.

THE UNITED STATES OF AMERICA.

[Vignette.]

To all to whom these presents shall come, Greeting:

Whereas, In pursuance of the act of Congress approved July twenty-six, eighteen hundred and sixty-six, entitled "An Act granting the right of way to ditch and canal owners over the public lands, and for other purposes;" the act amendatory thereof, approved July ninth, eighteen hundred and seventy; and the act approved May tenth, eighteen hundred and seventy-two, entitled "An Act to promote the development of the mining resources of the United States," there have been deposited in the General Land Office of the United States the Plat and Field Notes of survey of the claim of Benjamin M. Du Rell, Lemuel U. Colbath, and Isaac Schoenberg upon the

Kempton Mine accompanied by the Certificate of the Register of the Land Office at Salt Lake City, in the Territory of Utah, whereby it appears that in pursuance of said acts of Congress Benjamin M. Du Bell, Lemuel U. Colbath, and Isaac Schoenberg did, on the 27th day of April, A. D. 1874, enter and pay for said mining claim or premises, being Mineral Entry No. 103, in the series of said Office, designated by the Surveyor General as Lot No. 55, embracing a portion of the unsurveyed public domain, in the West Mountain Mining District in the County of Salt Lake, and Territory of Utah, in the District of Lands subject to sale at Salt Lake City, embracing four (4) acres and eighty-eight hundredths ($\frac{88}{100}$) of an acre of land more or less, and, according to the returns on file in the General Land Office, bounded, described, and platted as follows, with magnetic variation at sixteen (16) degrees, thirty (30) minutes, East, to-wit:

Beginning at corner No. 1, post 4 x 4 inches in size, marked "U. S. 55 No. 1;" thence south fourteen (14) degrees, thirty (30) minutes west, sixty (60) feet to post 4 x 4 inches in size, at intersection of southerly boundary of Survey No. 53, made for the claim of George Hardie upon the Northern Light mining claim; two hundred (200) feet to corner No. 2, post 4 x 4 inches in size, marked "U. S. 55 No. 2;" thence south seventy-five (75) degrees, thirty (30) minutes, east, two hundred and eighty-five (285) feet to corner No. 3, post 4 x 4 inches in size, marked "U. S. 55 No. 3;" thence north seventy-one (71) degrees, thirty (30) minutes east, one hundred and ninety-five (195) feet to corner No. 4, post 4 x 4 inches in size, marked "U. S. 55 No. 4;" thence north fifty-one (51) degrees, thirty (30) minutes east, five hundred and eighty-four (584) feet to corner No. 5, post 4 x 4 inches in size, marked "U. S. 55 No. 5;" thence north fourteen (14) degrees, thirty (30) minutes east, three hundred and thirty-six (336) feet to corner No. 6, post 4 x 4 inches in size, marked "U. S. 55 No. 6;" thence south fifty-one (51) degrees, thirty (30) minutes west, eight hundred and fourteen (814) feet to corner No. 7, post 4 x 4 inches in size, marked "U. S. 55 No. 7;" thence south seventy-one (71) degrees, thirty (30) minutes west, one hundred (100) feet to corner No. 8, post 4 x 4 inches in size, marked "U. S. 55 No. 8;" thence north seventy-five (75) degrees, thirty (30) minutes west, sixty-seven (67) feet to post 4 x 4 inches in size, at point of intersection with easterly boundary of said Survey No. 53, two hundred and twenty-two (222) feet to the place of beginning, containing four (4) acres and eighty-eight hundredths ($\frac{88}{100}$) of an acre of land more or less, the same being exclusive of any portion of the surface ground hereinbefore described, which is embraced by the said Survey No. 53. From Discovery shaft on said Kempton mine, U. S. Mineral Monument No. 1 bears north eighty-nine (89) degrees, fifteen (15) minutes east, at the distance of nine hundred and seventy-five (975) feet; Neptune shaft bears north sixty-three (63) degrees, thirty (30) minutes west, at the distance of eighty-two (82) feet; Prince Albert shaft bears north six (6) degrees, thirty (30) minutes east, at the distance of seventy (70) feet; and Elizabeth shaft bears north eighty-seven (87) degrees, thirty (30) minutes east, at the distance of one hundred and

fifty (150) feet. That portion of the Kempton mine hereby conveyed is described as follows, to-wit:

Beginning at Discovery shaft on said Kempton mine; thence north fifty-one (51) degrees, thirty (30) minutes east, seven hundred (700) feet to the easterly end of the claim; and from said Discovery shaft south, seventy-one (71) degrees, thirty (30) minutes west, one hundred and fifty (150) feet to a point from which the Neptune Discovery bears south thirty-two (32) degrees, thirty (30) minutes east, at the distance of one hundred (100) feet; thence from said point north seventy-five (75) degrees, thirty (30) minutes west, two hundred and fifty (250) feet to the westerly end of the claim; embracing eleven hundred (1100) linear feet along the line of the said Kempton mine as represented by yellow shading in the following plat:

(Here follows plat of the claim of B. M. Du Rell *et al.*, etc)

fifty (150) feet. That portion of the Kempton mine hereby conveyed is described as follows, to-wit:

Beginning at Discovery shaft on said Kempton mine; thence north fifty-one (51) degrees, thirty (30) minutes east, seven hundred (700) feet to the easterly end of the claim; and from said Discovery shaft south, seventy-one (71) degrees, thirty (30) minutes west, one hundred and fifty (150) feet to a point from which the Neptune Discovery bears south thirty-two (32) degrees, thirty (30) minutes east, at the distance of one hundred (100) feet; thence from said point north seventy-five (75) degrees, thirty (30) minutes west, two hundred and fifty (250) feet to the westerly end of the claim; embracing eleven hundred (1100) linear feet along the line of the said Kempton mine as represented by yellow shading in the following plat:

(Here follows plat of the claim of B. M. Du Rell *et al.*, etc)

MAPS

TOO

LARGE

FOR

FILMING

Now know ye, That the United States of America, in consideration of the premises, and in conformity with said acts of Congress, have given and granted, and by these presents do give and grant, unto the said Benjamin M. Du Rell, Lemuel U. Colbath and Isaac Schoenberg, and to their heirs, and assigns, the said mining premises hereinbefore described as Lot No. 55, embracing a portion of the unsurveyed public domain, with the exclusive right of possession and enjoyment of all the land included within the exterior lines of said survey not herein expressly excepted from these presents, and of eleven hundred (1100) linear feet of the said Kempton Mine vein, lode, ledge, or deposit for the length hereinbefore described throughout its entire depth, although it may enter the land adjoining, and also of all other veins, lodes, ledges, or deposits throughout their entire depth, the tops or apexes of which lie inside the exterior boundary lines of said survey at the surface extended downward vertically, although such veins, lodes, ledges, or deposits in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said survey: *Provided*, That the right of possession hereby granted to such outside parts of said veins, lodes, ledges, or deposits shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said survey at the surface, so continued in their own direction that such vertical planes will intersect such exterior parts of said veins, lodes, ledges, or deposits: *And provided further*, That nothing in this conveyance shall authorize the grantees herein, their heirs, or assigns, to enter upon the *surface* of a mining claim owned or possessed by another: To have and to hold said mining premises, together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereto belonging, unto the said Benjamin M. Du Rell, Lemuel U. Colbath and Isaac Schoenberg, and to their heirs and assigns, forever, subject, nevertheless, to the following conditions and stipulations:

First. That the grant hereby made is restricted to the land hereinbefore described as Lot No. 55, with eleven hundred (1100) linear feet of the Kempton Mine vein, lode, ledge, or deposit for the length aforesaid throughout its entire depth as aforesaid, together with all other veins, lodes, ledges, or deposits throughout their entire depth as aforesaid, the tops or apexes of which lie inside of the exterior lines of said survey, but subject to the right of other parties to follow any other vein or lode, with its dips, angles, and variations, legally held under a location made prior to May 10, 1872.

Second. That the premises hereby conveyed, with the exception of the surface, may be entered by the proprietor of any other vein, lode, ledge, or deposit, the top or apex of which lies outside of the exterior limits of said survey, should the same in its downward course be found to penetrate, intersect, extend into, or underlie the premises hereby granted, for the purpose of extracting and removing the ore from such other vein, lode, ledge, or deposit.

Third. That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reser-

voirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts.

Fourth. That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted, involving easements, drainage, and other necessary means to its complete development.

In testimony whereof, I, Ulysses S. Grant, President of the United States of America, have caused these letters to be made patent, and the seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the twenty-third day of February, in the year of our Lord one thousand eight hundred and seventy-five, and of the Independence of the United States the ninety-ninth.

[Seal United States General Land Office.]

By the President:

U. S. GRANT,
By S. D. WILLIAMSON, *Secretary.*

Recorded, Vol. 14, Pages 175 to 181.
Examined:

EUGENE A. FISKE,
Act. Recorder of the General Land Office ad Interim.

[Endorsed:] Ex. 14. Kempton Mine. United States Patent to Benjamin M. Du Rell *et al.* Dated February 23d, A. D. 1875. Recorded Mining Record Book H, Pages 166-7-8, April 12th, 1875. Edwin D. Woolley, Recorder Salt Lake County, U. T. Ex. 14. J. W. C. Filed U. S. Circuit Court District of Utah, Oct. 21, 1902. Jerrold R. Letcher, Clerk, by —— ——, Deputy. Filed for Record April 9th, 1875, at 10:20 a. m.

TO THE

Supreme Court of the United States of America.

THE PETITION OF LEONIDAS M. LAWSON, WILLIAM J. HARVEY, EDWARD BALBACH, JR., ENOS A. WALL, HEBER M. WELLS, THOMAS KEARNS, JUNIUS F. WELLS, THE IVANHOE MINING COMPANY, A CORPORATION, Petitioners,

Against

UNITED STATES MINING COMPANY, A CORPORATION, Respondents,

For a Writ of Certiorari to the United States Circuit Court of Appeals for the Eighth Circuit.

The said petitioners respectfully show to this court as follows: That it seems to your petitioners that a writ of *certiorari* ought to issue in this cause for a review thereof by this court on the following grounds:

First: "In the interests of jurisprudence and uniformity of decision" between this court and the said circuit court of appeals, there being a substantial conflict of decision on a vital and controlling matter of law involved in this cause, between the said circuit court of appeals and this court, the final authoritative determination of which question of law is important to all persons who hold patented titles to lode mining claims from the United States, under its laws.

Second: Because there is in like manner a conflict of decision between the said circuit court of appeals and

the supreme court of the State of Utah on an important, controlling and decisive question of law involved in this case, and it is important to the general stability of patented titles to mining claims in the United States, and in the said eighth judicial circuit, that the law shall be uniformly established in harmony with the previous decision of this court, and of the supreme court of Utah in the like case.

Third: There is a conflict of decision between the supreme court of Utah and the said circuit court of appeals, in respect of the construction and application of Section 3511 of the Revised Statutes of Utah of 1898, whereby in this cause the right of trial by jury, though demanded by your petitioners, was denied them.

These several grounds are hereinafter more specifically stated and set forth. And in this behalf your petitioners further show unto the court as follows:

I.

That your petitioners, Leonidas M. Lawson and William J. Harvey, each of them, was at the time of the commencement of this suit, and is now a citizen of the State of New York, and the said Edward Balbach, Jr., was at such time and is now a citizen of the State of New Jersey, and said Enos A. Wall and Heber M. Wells and Thomas Kearns and Junius F. Wells, each of them, was at such time and is now a citizen of the State of Utah, and the said Ivanhoe Mining Company was at such time and is now a mining corporation organized and existing under the laws of the State of California, and is a citizen thereof. And at said time the said respondent United States Mining Company was and now is, a mining corporation organized and existing under the laws of the State of Maine, and is a citizen thereof.

II.

That the history of this case and the facts on which this suit is founded, are, in brief, as follows:

1st.—In the month of February, A. D. 1902, the com-

plainant in the suit, the said United States Mining Company, filed its bill of complaint in the United States Circuit Court for the Eighth Circuit and District of Utah against your petitioners above named as defendants in said bill; and in said suit the jurisdiction of the said circuit court attached solely, on the ground of the diversity of the citizenship of the parties plaintiff and defendant, as above set forth.

2nd.—That said complainant brought its bill to quiet its alleged title to certain alleged lode mining claims called the Northern Light, Jordan Extension, Grizzly and Fairview claims, in the West Mountain Mining District, Salt Lake County, State of Utah. It is alleged in the bill in substance, that the complainant is the owner and in the possession of said claims and of all the metalliferous ores, earth and rock in place vertically beneath the surface thereof, and that the defendants have entered into the same beneath the surface thereof, and are mining and taking the said ores therefrom. That the defendants are doing this, because they assert that they are the owners and in the possession of a certain lode mining claim called the Kempton Mining Claim, U. S. Lot No. 55, which lies adjoining the south of the above named claims of complainant. And moreover, that the complainant is the owner and in the possession of two other mining claims called the Jordan and Mountain Gem claims, which lie to the south of the Kempton claim, and that the ores which are found and which are being mined underneath the Jordan Extension, the Northern Light, the Grizzly, and the Fairview claims above mentioned belong to a certain lode or lodes which apex in the Jordan and Mountain Gem claims and not in the Kempton claim as wrongfully asserted by the defendants, and that the defendants are extracting and threaten to continue to mine, extract and carry away large quantities of pay ores therefrom, the property of complainant of the value of more than $10,000. That the lodes or veins in which the defendants are mining, apex as aforesaid, in Jordan and Mountain Gem ground, and in their descent into the earth depart from a perpendicular insomuch that they pass beyond vertical

planes of the northerly side lines of the Jordan and Mountain Gem claims, and underneath and past vertical planes of the exterior surface boundaries of the Kempton and Ashland claims, and into and underneath the Jordan Extension, Northern Light, Grizzly, and Fairview claims, and that it is in these lodes thus apexing in the Jordan and Mountain Gem claims, and thus dipping underneath the other claims of complainant, that the defendants are trespassing, and to which complainant prays to have its title quieted, and a perpetual injunction against defendants from mining therein.

3rd.—The original bill did not allege that the complainant is in possession of the Jordan and Mountain Gem claims, and the alleged lodes apexing therein, and therefore, defendants demurred to the bill on that ground, which demurrer was sustained, and thereupon complainant filed its amended bill, in which it alleges its possession of the Jordan and Mountain Gem claims, and of the said alleged lodes, alleged to have their apices therein. (Printed Record, pp. 1 to 9.)

4th.—The defendants demurred to the amended bill for want of equity, in that it appears on its face that there is an entire *omission* to allege that complainant's alleged title and right to possession of the alleged veins, lodes, and mines, has been previously established at law, nor that any action at law is pending to establish said title, and that no impediment is alleged or shown to exist, to an action at law being brought to establish complainant's alleged legal title and right to the possession of the lodes and mines in controversy, and that it appears that the titles, estates, and rights to possession which are asserted are purely legal, and that it appears that the complainant has an adequate remedy at law to try such titles, estates and rights of possession. (Record, pp. 10 to 12.)

5th.—This demurrer was overruled by the court, and thereupon the defendants answered the amended bill, in which answer they deny all its material allegations, and they aver affirmatively, that they are the owners, in the possession, and entitled to the possession of the lode min-

ing claim called the Kempton claim, U. S. Lot 55, and that it has a large lode which has its apex inside the exterior surface boundaries of the claim, which lode has been mined and traced continuously from its apex at the surface in Kempton ground on its dip to a depth of about 400 feet underneath neighboring surface ground, and particularly under the Jordan Extension, Northern Light, Grizzly, and Fairview claims, and that the defendants and their predecessors in title have been for more than twenty-five years in the peaceable possession and immediate occupation of the Kempton claim and lode under a patented title thereto. (Record, pp. 16 to 26.)

6th.—Subsequently, by consent of complainant, the defendants filed an amended answer in which they brought in the said Ivanhoe Mining Company and in the amended answer the Kempton claim and title is averred substantially as in the original, and it is averred, that the Ivanhoe Company is the owner, in possession and entitled to the possession under a patented title thereto of a claim called the Ashland Claim, U. S. Lot 64. (Record, pp. 28 to 41.)

7th.—To this answer the complainant made the usual replication and the cause was set down on the equity calendar of the court, and on the ..... day of October, A. D. 1902, it came on for trial in the circuit court on the issues thus joined by bill and answer, but before any evidence had been introduced the defendants were allowed to have entered upon the record the following objection or suggestion:

"Mr. Hiles: I wish at this point to state an objection. The bill of complaint in this case, we assert, is an ejectment bill. At the proper time, I wish to make a motion to dismiss it, upon the ground that there are issues at law which ought to be tried by a jury, and we shall then present the reasons, which we think will result in a dismissal of the case." (Record, p. 46.)

Afterwards when the complainant had rested its case in chief, and it appeared from the evidence adduced by it, that the defendants were in the actual possession and

immediate occupation of the mines, claims and lodes in controversy, and particularly so by the testimony of two of its witnesses, J. Fewson Smith (Record, pp. 82 to 103), and A. F. Holden (Record, pp. 103 to 113), the defendants made the following motion which was entered in the minutes of the court:

"The defendants now come and move the court to dismiss the amended bill of complaint in this cause, or to enter an order directing that plaintiff be required to plead the facts which involve the issues at law in the case which appear on the face of the amended bill, and now in the evidence in support of it. This motion is made on the grounds:

First: That it appears by the amended bill of complaint that the defendants were at the time of the commencement of the action, and at the filing of the said amended bill, and are now in possession of the mine and lode mentioned in the said amended bill of complaint from the surface of the earth in Kempton and Ashland ground on its dip under the adjacent alleged mining claims called the Jordan Extension, Grizzly, Northern Light and Fairview claims.

Second: That it appears by the evidence that has been elicited by plaintiff in support of its said amended bill of complaint, that the defendants were at the time of filing said amended bill, and are now in possession of the mine and lode mentioned in the amended bill of complaint from the surface of the earth in Kempton and Ashland ground, on its dip under adjacent surface ground of alleged mining claims called The Jordan Extension, Northern Light, Grizzly and Fairview claims. And the said defendants crave an order for, and hereby insist upon, and demand a trial by jury of their right to the possession of said mine and lode so as aforesaid shown by complainant's evidence to be and to have been at the commencement of this action in the possesison of the defendants." (Record, p. 114.)

8th.—The foregoing motion was taken under advisement by the circuit court, and the trial of the cause was proceeded with without a jury, and evidence was intro-

duced by the respective parties to prove the issues on the part of each respectively, and thereafter the whole case was argued and submitted for decision, and thereafter, on the 23d day of March, A. D. 1903, the circuit court rendered its decree as follows:

"FINAL DECREE.

This cause came on to be heard at the May term, was argued by counsel and taken under advisement by the court, and thereupon upon consideration thereof it is ordered, adjudged, and decreed by the court:

First: That the motion made by the defendants, at the conclusion of the plaintiff's testimony in chief to dismiss the bill of complaint herein, or retaining the bill, to require plaintiff to commence an action at law to determine the ownership to the ores in dispute, be and the same is hereby overruled and denied.

Second: It is further ordered, adjudged and decreed by the court, upon the consideration of the pleadings, and all the evidence taken and given upon the hearing of said cause, that the Bill of Complaint herein be and the same is hereby dismissed at plaintiff's costs.

JOHN A. RINER, Judge.
JERROLD R. LETCHER, Clerk."

Filed March 23rd, 1903.

(Record, pp. 568 to 569.)

9th.—Thereafter the complainant prosecuted an appeal from this decree to the said circuit court of appeals, and upon consideration thereof the latter court reversed the decree of the circuit court and directed a decree to be entered in favor of complainant in conformity with the prayer of the amended bill of complaint.

A printed and certified copy of the opinion of the circuit court of appeals is attached to the copy of the record which is filed with this petition, and is also printed in the appendix to this petition.

At the trial of the cause in the circuit court, the complainant offered evidence which tended to prove that the lode in controversy consists of a belt of limestone from

150 to 250 feet in width, which was as wide or wider than each of the Kempton or Ashland or Jordan or Mountain Gem claims.

And the complainant introduced in evidence subsequent patents from the United States, to the predecessors in title of complainant, of the Jordan and Gem claims which were dated respectively July 14th, A. D. 1877, and July 18th, A. D. 1898. These patents were submitted in evidence as parts of complainant's Exhibits "U" and "Y." (Record, pp. 320 to 329.)

It was stipulated by counsel that all the papers in complainant's Exhibits "U" and "Y" "except the patents themselves, need not be made part of the record on appeal to the circuit court of appeals. (Stipulation, Record, p. 576.)

These patents not having been set out in the printed record, they are printed and set out as complainant's Exhibits "U" and "Y" and attached to this petition and such patents cover the same part of the alleged broad lode and belt of limestone, and supposed broad apex, as do the Kempton and Ashland patents above mentioned. The said last named patents are prior to complainant's patents, and are dated respectively February 23rd and September 27th, 1875. (Record, pp. 115 and 137.) And the said patents to the Jordan and Gem claims each contains an express exclusion and exception from the grant of the above mentioned areas in favor of the Kempton.

And at the trial of said cause the complainant, by its counsel, admitted that the vein or lode and ore body in dispute in this action was continuous from the Kempton and Ashland ground, and within the said excepted and excluded area on its dip downward to the lower workings of said mine. The said admission being as follows:

"Q.—Now, I wish, Mr. McNeill, you would describe what you know about the continuity of the vein from the top, where you say you mined the croppings in 1884, down to the lower workings in the Ashland fissure, if you know it.

Mr. Dickson: As to continuity of the ore speak-

ing of the bed vein, or the fissure vein, as testified to by other witnesses, we do not dispute, we do not question." (Printed Record, p. 294.)

As is implied in the foregoing admission, the said fact was at the said trial, "testified to by other witnesses" and thus proved.

On the opposite page of this petition is set forth a copy of the plat which is attached to and made a part of the said Jordan patent, and is a correct plat of the Kempton, the Ashland, and the Jordan, showing the relative location of the several claims, and their several said conflicting areas, which were excluded and excepted in the Jordan and Gem patents, in favor of the Kempton and Ashland patents. And moreover the complainant offered and introduced in evidence under the objection of the defendants, that the same were immaterial, and incompetent, the notices of location of the Jordan and Mountain Gem claims, which show that they were located in 1863 and 1864, respectively, and prior to the patents to the Kempton and Ashland claims.

The said notices of location are set out in the record as complainant's Exhibit "V," (Record, p. 321) and "Z," (Record, p. 329) and are as follows:

EXHIBIT "V."

"NOTICE.

JORDAN S. M. Co.

The undersigned members of the Jordan Silver Mining Co. claim for mining purposes one share of two hundred feet each and one additional claim of two hundred feet for original discoveries George R. Ogilvie, on this lead of mineral ore with all its dips, spurs and angles, beginning at the stake situated one hundred feet northeast of Gordon's shanties in Bingham (Canion) Kanyon in West Mountain and running two thousand two hundred feet in a westerly direction along the side of said mountain, on a line with Bingham Canyon, and intend to work the same

according to law, according to the mining laws of said Mining District.

Archibald Gordon	1 share	M. G. Lewis	1 share
George B. Ogilvie	2 shares	Alex Benstull	1 share
Alix Ogilvie	1 share	James Finnertby	1 share
P. E. Conner	1 share	Samuel Egbert	1 share
R. C. Dreene	1 share	G. W. Carlton	1 share
Wm. Hickman	1 share	Niel Anderson	1 share
Robert R. Reid	1 share	Edward McGarry	1 share
John Harcastle	1 share	W. J. Perkins	1 share
C. J. Sprague	1 share	H. O. Pratt	1 share
Thomas Benstead	1 share	Robert Pollock	1 share
James Briniger	1 share	Daniel McLain	1 share
Henry Benstead	1 share	N. B. Eldred	1 share
Hugh O. Donnel	1 share		

Bingham Kanyon, Salt Lake County, Utah Territory, Sept. 17, 1873.

A. GORDON, Recorder."

EXHIBIT "Z."

"NOTICE.

MOUNTAIN GEM CO. & LODE.

We, the undersigned, claim sixteen hundred feet of this lode known as the Mountain Gem with all the dips, spurs, angles, off shoots and variations, and intend to work the same according to the mining laws of this district. Said claim is situated west of the Pollock, commencing at a cut in the hill and running south two hundred feet to a gulch and north fourteen hundred feet from said cut parallel with the Pollock lode.

I. N. Merrill	2 shares
R. F. Dusky	1 share
Bernard Hanlon	1 share
Robert Pollock, H. M. May, Feb. 14, 1867	1 share
Wm. M. Johns	1 share
Lemuiel Laryell	1 share
Joseph Donley	1 share

Located Aug. 20th, 1864.
Recorded Aug. 24th, 1864.
Bingham Canyon, West Mountain District.
JAS. L. WARREN, Deputy Recorder."
See Book M, p. 33.
Relocated as Ameer. See Book M, p. 356.

And it is asserted by complainant and so decided by the said circuit court of appeals, that these prior locations, and subsequent patents constitute a superior title to the part of the lode apexing in the conflicting area, notwithstanding the seniority of the Kempton and Ashland patents, and notwithstanding the express exclusions and exceptions in their favor, which are contained in the Jordan and Gem patents as above set forth.

III.

With this statement, some of the imperfections of which brevity has necessitated, your petitioners respectfully submit that the questions and propositions of law involved in this case are substantially as follows:

1.—Can a prior locator of a junior patent, prove his alleged prior location against a senior patent, covering the same ground and the lode or lodes embraced and apexing therein, and thus attack collaterally, and defeat the senior patentee's title either to such surface ground, or the lode or lodes apexing therein, when there is no express exclusion or exception in the senior patent in favor of the prior location, on which the junior patent is founded?

2.—Can a junior patentee of mining ground, and of the lode or lodes apexing therein, whose patented ground is covered by a senior patent and which ground and lode or lodes are expressly excluded and excepted in the junior patent in favor of the senior patent, prove a prior location of the ground thus excluded and excepted in the junior patent, and thereby cancel or annul the exception in the junior patent. In other words, in such case, is the prior location the superior title to the senior patent notwithstanding such exclusion and exception in the junior patent in favor of the senior patent?

3.—Is this though nominally a suit in equity to quiet title, not a suit at common law within the meaning of the Seventh Amendment of the Constitution of the United States, and whether your petitioners have not been deprived of the right to trial by jury in this case, which is provided for and preserved by said Seventh Amendment?

We think it proper to here state, that as respects the last question, your petitioners are about to prosecute an appeal from the said circuit court, to this court, under the fourth clause or condition, of section five of the Act of Congress of March 3d, 1891, creating the Circuit Courts of Appeals, which clause provides in substance, that in cases which involve the construction or *application* of the Constitution of the United States, an appeal may be taken directly from a circuit court to this court; and on the ground, that the denial by the circuit court of our request for a jury trial in this cause, involves the application to the case of the first clause of the Seventh Amendment to the Constitution of the United States, which in substance provides, that in suits at common law in the courts of the United States where the amount in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved.

IV.

And your petitioners respectfully submit that a writ of *certiorari* ought to issue in this case for the following reasons:

1st.—In the interest of jurisprudence, and uniformity and harmony of decision between this court and the circuit court of appeals, in respect of the questions above indicated.

2nd.—Because if as decided by this court in Forsyth v. Hammond in 166 U. S. 506, this court will grant a *certiorari* in a case where there is a conflict of opinion and judgment between different circuit courts of appeals, and in cases where there is an important conflict of opinion between a state supreme court and a circuit court of appeals in the same circuit, for a much stronger reason, as your petitioners humbly conceive, may this court issue a writ of *certiorari* in a case where there is an obvious conflict, or lack of uniformity between the decision of a circuit court of appeals, and this court, such as there is between this case, and the case of Argentine Co. v. Terrible Co., 122 U. S. 478 to 486, as hereinafter set forth.

3rd.—Because the said decision of the circuit court of appeals in this cause, is in conflict with the decision of the supreme court of the State of Utah, in this, that it has permitted the complainant to assert and prove the alleged prior location of the Jordan and Gem claims, on the lode or lodes in controversy, and to thereby defeat the title of your petitioners to such lode or lodes, under the said senior patents to their predecessors in title, notwithstanding both said complainant and its predecessors in title in the Jordan and Gem claims, had failed to make or assert any protest or adverse claim against the issuance of such senior patent, as required by Section 2325 of the Revised Statutes of the United States, and did thereby annul and defeat the presumption or express assumption of said section 2325, that no adverse claim exists to the right of possession and title of such senior patentees, in and to the lode or lodes in controversy, which decision, is in conflict with the decision of the supreme court of the State of Utah, in the case of Lavignino v. Uhlig, 26 Utah Reports, 1, a state which is within the territorial limits and jurisdiction, of the said eighth judicial circuit.

4th.—Because there is a conflict of decision between the supreme court of Utah and the said circuit court of appeals, in respect of the construction and application of Section 3511 of the Revised Statutes of Utah of 1898, whereby, in this cause, the right of trial by jury, though demanded by your petitioners, was denied them.

As respects the first and second questions and propositions above set forth, your petitioners submit that the decision of the circuit court of appeals is contrary to the decision of this court in a like case, for in the case of Argentine Co. v. Terrible Co., 122 U. S. 478 to 486, this court gave effect to the exceptions in a patent to mining ground in these words:

"The defendants relied on the trial upon patents of the United States issued for its several claims, but those patents contain an exception which would also seem to exclude its pretensions. It is as follows after the habendum clause, excepting and excluding, however, all that portion of said surface ground embraced by mineral sur-

vey No. 254, of the Adelaide Mining Claim, and also excepting and excluding all veins, lodes or deposits, the tops or apexes of which lie inside of the exterior lines of said Adelaide survey at the surface extended down vertically, or which have been therein discoverd and developed."

Argentine Co. v. Terrible Co., 122 U. S. 478 to 486.

And in its judgment in that cause this court did establish that such exceptions in a patent from the government of the United States, were and are effectual to reserve from the grant to a patentee, the ground thus expressly excepted in the patent, which rule the said circuit court of appeals has declined to observe or follow in this cause.

As respects the third proposition above mentioned, the supreme court of Utah has construed and applied section 2325 of the Revised Statutes of the United States and has decided thereon, that one who fails to file an adverse claim to an application for a patent to a mining claim, is conclusively presumed by force of the statute to have none, and he cannot thereafter be heard to say that he has a superior title to the patentee or applicant for patent by reason of an asserted prior location of the ground in controversy.

Lavignino v. Uhlig, 26 Utah Rep. 1, 71 Pacific Rep. 1046.

And in that decision the supreme court of Utah followed and adopted the decision of Mr. Justice Brewer of this court, at the circuit, in the case of Wight v. Dubois, 21 Fed. Rep. 693 to 696, wherein he decided the point under notice, in these words:

"First, the Government as a land-owner offers its lands for sale upon certain prescribed conditions, compliance with which is a matter of settlement between the owner and purchaser alone, and with which no stranger to the title can interfere.

Second, publication of notice is process, bringing all adverse claimants into court, and if no adverse claims are presented, it is conclusively presumed that none exist, and that no third parties have any rights or equities in the land.

Third, thereafter the only right or privilege remaining to any third parties is that of protest or objection filed with the Land Department and cognizable there only."

Wight v. Dubois, 21 Fed. 693 to 696;
Lavignino v. Uhlig, 26 Utah 1 to 20. Pacific Rep. 1046.

As respects the fourth proposition above set forth, the circuit court of appeals in its opinion in this case decides that section 3511 of the Revised Statutes of Utah provides, that in actions to quiet title thereunder, the legal as well as equitable issues presented by the pleadings may be tried in equity without the intervention of a jury, whereas the supreme court of Utah, in the case of Park v. Wilkinson, 21 Utah 279, has construed and applied said section 3511 as follows:

"Actions to quiet title, or to determine adverse claims under section 3511, Revised Statutes, 1898, may be of a legal or equitable character, depending upon the pleadings; but where there are both equitable issues, and issues of fact in the case, the court should first determine the equitable issue, and then submit the issues of fact to a jury upon proper instructions, and a failure to do so constitutes reversible error."

Park v. Wilkinson, 21 Utah, 279 to 285.

Wherefore, the premises considered, your petitioners pray that this Honorable Court will be pleased to grant a writ of certiorari in this case to the circuit court of appeals for the Eighth Circuit to bring up this case to the Honorable Court for such proceedings therein as to this Honorable Court may seem just.

LEONIDAS M. LAWSON,
WILLIAM J. HARVEY,
EDWARD BALBACH, JR.,
ENOS A. WALL,
HEBER M. WELLS,
THOMAS KEARNS,
JUNIUS F. WELLS,
THE IVANHOE MINING COMPANY,
Petitioners.

STATE OF UTAH,
COUNTY OF SALT LAKE. }

Enos A. Wall, one of said petitioners, being duly sworn, says: I have read the foregoing petition and know the contents thereof; that the same is true of my knowledge, information and belief; that my knowledge is derived from the record in this case, and from what has taken place in my hearing, both in said circuit court and said circuit court of appeals in which this action has been heard.

E. A. Wall
.....
One of Said Petitioners.

Subscribed and sworn to before me this 17 day of April, A. D. 1905.

Sarah L. Thomas
.....
Notary Public.

We hereby certify that we have carefully examined the foregoing petition, and that in our opinion the petition is well founded. Ogden Hiles Chas. E. Hughes & Co. L. R. Rogers.
.....
Of Counsel for Petitioners.

APPENDIX.

The following are printed copies of the opinion of the circuit court of appeals of the Jordan and Mountain Gem patents, which are referred to in the foregoing petition and certified copies of which are attached to the original petition on file herein.

United States Circuit Court of Appeals

EIGHTH CIRCUIT

No. 1927.—September Term, A. D. 1904.

United States Mining Company, Appellant,
vs.
Leonidas M. Lawson, et al., Appellees.

Appeal from the Circuit Court of the United States for the District of Utah.

Mr. William H. Dickson and Mr. George Sutherland (Mr. A. C. Ellis, Mr. A. C. Ellis, Jr., Mr. Waldemar Van Cott, and Mr. E. M. Allison were with them on the brief) for appellant.

Mr. Ogden Hiles and Mr. Charles J. Hughes, Jr., (Mr. L. R. Rogers was with them on the brief) for appellees.

Before Sanborn, Van Devanter and Hook, Circuit Judges.

This is a suit to quiet the title to four mining claims in the West Mountain Mining District, Utah, and to bodies

of ore beneath their surfaces. The allegations of the bill are briefly these: Complainant owns the Jordan Extension, Grizzly, Northern Light, and Fairview claims, and also the bodies of ore vertically beneath their surfaces, and is in possession of these claims and engaged in working them, with two other claims hereinafter mentioned, as one property for mining purposes. Defendants claim to own the underlying ore bodies, as parts of veins or lodes which have their apices within the surface boundaries of adjacent claims belonging to and in the possession of defendants. Under their claim of ownership defendants through underground workings have wrongfully entered the underlying ore bodies in complainant's Jordan Extension, Grizzly, and Northern Light claims, have extracted therefrom large quantities of valuable ore, and are threatening to continue to extract ore therefrom and to extend their underground workings and mining operations to the remaining underlying ore bodies, including those beneath the surface of the Fairview claim. If any ore body beneath the surface of the Jordan Extension, Grizzly, Northern Light, or Fairview is part of a vein or lode dipping or extending into such claim from a claim of the defendants it is part of a vein or lode which has its apex in the Old Jordan and Mountain Gem mining claims, which are owned by and in the possession of the complainant, and such ore body is within the extralateral rights incident to the last named claims. Defendants' claim of ownership of such underlying ore bodies is false and unfounded in fact and constitutes a cloud upon complainant's title. The prayer of the bill is that the title of complainant to the four claims and to the underlying ore bodies be quieted, and that defendants be perpetually enjoined from asserting any claim thereto and from extracting any ore therefrom.

A demurrer to the bill on the ground that it discloses that complainant has an adequate remedy at law was overruled.

The answer of defendants specifically denies the allegations of the bill, excepting those relating to diverse citizenship, and contains affirmative allegations substantially

as follows: Defendants are the owners and in the possession of the Kempton and Ashland mining claims, which are adjacent to the Jordan Extension, Grizzly, Northern Light and Fairview claims of complainant. The only ore bodies in complainant's said claims are parts of veins or lodes which have their apices within the Ashland and Kempton claims of defendants, and which, on their dip beneath the surface, extend toward and through complainant's claims. Defendants entered these ore bodies and extracted and removed ore therefrom, as they were and are lawfully entitled to do, in pursuance of their right under the mining laws of the United States to follow extralaterally such veins or lodes on their dip.

As presented in the large volume of testimony which was taken, the controversy may be summarized in this manner: The Old Jordan, Mountain Gem, Kempton, Ashland, Jordan Extension, Northern Light, Grizzly, and Fairview are contiguous mining claims in the West Mountain Mining District, Utah, the Kempton and Ashland partially separating the surfaces of the Jordan Extension, Grizzly, Northern Light, and Fairview from the surfaces of the Old Jordan and Mountain Gem. The apex of a stratum of limestone, the strike of which is in a southwesterly and northeasterly direction, is longitudinally bisected or divided by the Old Jordan, Mountain Gem and Kempton. The southerly side lines of the Kempton, as patented, are in part coincident with the northerly side lines of the Old Jordan and Mountain Gem, as patented, and the greater part of the width of the apex of the limestone is south of the lines so dividing the patented ground and is within the surface boundaries of the Old Jordan and Mountain Gem. The limestone is from 100 to 200 feet in width, is confined between well defined walls of quartzite, dips northwesterly at an angle of about 30 degrees, passes beyond the northerly side lines of the Old Jordan and Mountain Gem and extends, on its dip beneath the surface, through the Kempton, Ashland, Jordan Extension, Grizzly, Northern Light, and Fairview. The ore bodies in dispute are within the stratum of limestone and vertically beneath the surfaces of the four claims last named. The

complainant owns the Old Jordan, Mountain Gem, Jordan Extension, Grizzly, Northern Light and Fairview, and the defendants own the Kempton and Ashland. The parties are in possession of the surfaces of their respective claims and are engaged in working them extensively for mining purposes. The evidence was chiefly directed to the question whether or not the stratum of limestone constitutes a single broad vein or lode of mineral bearing rock. Complainant insisted, and its evidence tended to show, that this stratum is such a single vein or lode, while the defendants insisted, and their evidence tended to show, that the stratum embraces several distinct and independent veins or lodes; that one such vein or lode, called a bedded vein, has its apex within the surface lines of the Kempton, extends on its strike in the direction of the Kempton end lines, passes on its dip beneath the surface beyond the northerly side line of that claim and through the Jordan Extension, Ashland, Northern Light, Grizzly, and Fairview; that another distinct and independent vein or lode, called the Ashland cross fissure and of which the bedded vein is claimed to be a lateral continuation or appendage, has its apex in the Ashland, passes on its dip beneath the surface beyond the northwesterly side line of that claim and through the Northern Light, Grizzly, and Fairview, and that the ore bodies in controversy are parts of the two veins or lodes, the apices of which are within the Kempton and Ashland. In the assertion of the extralateral rights intended to be set forth and sustained by their answer and evidence, the defendants have extended their underground workings and mining operations into the ore bodies in dispute and have removed some of them, but others are as yet in place and undisturbed, including those underlying the surface of the Fairview.

The court dismissed the bill but filed no findings of fact or opinion disclosing under what view of the facts or of the law the decree of dismissal was rendered.

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VAN DEVANTER, Circuit Judge, after stating the case as above, delivered the opinion of the court.

The elements of Federal jurisdiction being present,

a right of action created or enlarged by the laws of a State and made enforceable in its courts of general jurisdiction is equally enforceable in the Federal courts sitting in that State; but, notwithstanding the procedure prescribed by the laws of the State, the enforcement in the Federal courts can be by suit in equity only where there is not a plain, adequate and complete remedy at law according to the distinction between actions at law and suits in equity prevailing in those courts. Rev. St. Sec. 723; *Clark v. Smith,* 13 Pet. 195; *Holland v. Challen,* 110 U. S. 15; *Reynolds v. Crawfordsville Bank,* 112 U. S. 405; *Whitehead v. Shattuck,* 138 U. S. 146; *Scott v. Neely,* 140 U. S. 106; *Wehrman v. Conklin,* 155 U. S. 314; *Prentice v. Duluth, etc., Co.,* 7 C. C. A. 293, 297, 58 Fed. 437; *Darragh v. Wetter, etc., Co.,* 23 C. C. A. 609, 78 Fed. 7; *Gillis v. Downey,* 29 C. C. A. 286, 291, 85 Fed. 438; *Sawyer v. White,* 58 C. C. A. 587, 122 Fed. 223.

The laws of Utah give a right of action in the court of that State to quiet the title to real property without any previous adjudication of the title in an action at law, and without reference to the possession. Rev. St. 1898, Secs. 2915, 3511. This enlarged right is enforceable by a suit in equity in the Federal courts when the complainant is in possession and the defendant is out of possession, or when both parties are out of possession, because in either case there is no adequate and complete remedy at law. *Holland v. Challen; Wehrman v. Conklin, supra.*

It is objected that the present bill shows that the ore bodies in dispute are in the possesion of the defendants, and not of the complainant, and therefore that the latter has an adequate and complete remedy at law. The objection is untenable. Where the true owner of a mining claim is in possesison of its surface, claiming title to the entire claim, his possession in legal contemplation extends to everything which is part of the claim, whether vertically beneath its surface or within the extralateral right granted by Congress, which is not in the actual possession of another holding adversely. *Clark v. Courtney,* 5 Pet. 319, 354; *Hunnicutt v. Peyton,* 102 U. S. 333, 368; *Montana, etc., Co. v. St. Louis, etc., Co.,* 42 C. C. A. 415, 420, 102 Fed.

430; *Empire State, etc., Co. v. Bunker Hill, etc., Co.*, 58 C. C. A. 311, 315, 121 Fed. 937; *Last Chance Mining Co. v. Bunker Hill, etc., Co.*, ... C. C. A. ...., 131 Fed. 599, 583. The bill states that the complainant is the owner of the claims of which the ore bodies in dispute are part, and is in possession of these claims and engaged in working them as one property for mining purposes. This is a sufficient allegation of complainant's possession of the ore bodies as well as of the surfaces of the claims. The further statement that the defendants, through underground workings, wrongfully entered the ore bodies and extracted ore therefrom and are threatening to extend their underground workings and to continue the extraction of ore, even if deemed an admission or allegation of an ouster or dispossession of the complainant in respect of the ore bodies actually embraced in the defendants' underground workings, leaves the allegation of the complainant's possession unimpaired in respect of the ore bodies which have not been penetrated by defendants' underground workings but remain in place and undisturbed.

The principal purpose of the present suit is to obtain a determination of the adverse claim to the remaining ore bodies, not merely to recover the possession of the underground workings and chambers from which the defendants have removed the ore, or to recover the value of the ore removed. Being itself in possession of the remaining ore bodies, and the defendants being out of possession, the complainant has no adequate and complete remedy at law. The case of *Boston, etc., Co. v. Montana, etc., Co.*, 188 U.S. 632, relied upon by the appellees, is distinguishable from this because in that case there was no allegation that the complainant was in possession or that both parties were out of possession, and the suit was not one to quiet title, but to recover for ores extracted and to enjoin further trespass.

A careful examination and consideration of the evidence clearly convinces us that the stratum of limestone constitutes a single broad vein or lode of mineral-bearing rock extending from the quartzite on one side to the quartzite on the other. The limestone has been profoundly

broken, altered, and mineralized, and has thereby obtained an individuality which, apart from other differences, clearly distinguishes it from the neighboring rock. There is a local absence of ore in places, a continuous occurrence of it in others, and a seeming local occurrence of it in still others, but the ore bodies are not separated, one from another, by any defined boundaries. As in *Eureka Consolidated Mining Co. v. Richmond Mining Co.*, 8 Fed. Cas. No. 4548, pp. 819, 825, they are parts of one greater deposit, which permeates, in a greater or less degree, with occasional intervening spaces of barren rock, the whole mass of limestone. As shown by extensive exploration and actual mining, the mineralization has been so general that its only defined limits are the quartzite walls which bound the limestone, and within it one may reasonably expect to encounter ore by driving or cross-cutting in any direction.

In addition to the many small fissures which exist only in the limestone and extend in every direction, other ore bearing fissures of approximately a northerly and southerly direction are found in the quartzite, and it is the contention of the defendants that these extend through the limestone; that its mineralization is due to them and occurred at the same time and in the same manner as did the deposition of the ore in them, and that the ore bodies in the limestone are lateral continuations or appendages of these cross fissure veins. Of this it is sufficient to say that, whatever may have been the mineralizing process, the alteration and mineralization of the limestone were so general and extensive as to convert it into a single broad vein or lode within which the cross fissure veins are without defined boundaries and so far lose their identity that they cannot be distinguished from the larger ore bodies therein. The ore in the quartzite is inconsiderable in amount and is confined to these fissure veins, but it is not so in the limestone. In the evidence for the defendants it is conceded that there are no walls separating the cross fissures from the bodies of ore in the limestone, but it is attempted to be shown that the ore in the fissures, and especially in the Ashland fissure, is distinguishable because

its lamination conforms to the strike and dip of the fissure, while the lamination of the ore on either side conforms to the strike and dip of the limestone. We think the evidence for the defendants, as well as that for the complainant, shows that the difference in the lamination is not always discernible and is an uncertain and unreliable test of the extent and boundaries of the cross fissures. To illustrate: Mr. Wall, one of the defendants, says the plating of the ore in the limestone is similar in appearance to that of the ore in the fissure where the ore bodies are large and wide, but at a considerable distance from the fissure the structural lines become distinct and parallel to the bedding of the limestone. Mr. Legg, a witness for the defendants, says there is no sharp line of division and the fissure structure and the influence of the fissure extend for considerable distances from the original fissure. Mr. Neill, another of the defendants' witness, says the fissure is entirely destroyed in places within the ore bodies in the limestone. Mr. Moorehouse, also a witness for the defendants, says the Ashland fissure has a width in the quartzite of not exceeding three feet and, when measured by the difference in the lamination of the ore, has a width in the limestone of 180 feet. The defendants lay much stress upon the testimony of Mr. Holden, a witness for the complainant, who says: "The Ashland vein can be followed for quite a distance into the Big Jordan (limestone) lode and can be traced. It is like all of these fissures; it is somewhat difficult to follow through but the way we do trace them we get a line from the quartzite on either side or from one quartzite wall and follow that line out, but we can't always find the limits of the fissure which we take to be one of the cross fissures." This is far short of a statement that the boundaries of the Ashland, or of any other fissure, are well defined within the ore bodies in the limestone. Particularly is this true when the entire testimony of the witness is considered, because he also says much of the limestone has been mechanically and chemically altered until the entire original stratification or bed structure has disappeared. Our conclusion upon this controverted question of fact is that the ore bodies

within the claimed spaces of intersection created by the cross fissures, including the Ashland, are not susceptible of identification and separation from those in the stratum of limestone and must be held to be parts of the single broad vein or lode, and not parts of distinct and independent cross fissure veins.

Where two or more mining claims longitudinally bisect or divide the apex of a vein, the senior claim takes the entire width of the vein on its dip, if it is in other respects so located as to give a right to pursue the vein downwards outside of the side lines. This is so because it has been the custom among miners, since before the enactment of the mining laws, to regard and treat the vein as a unit and indivisible, in point of width, as respects the right to pursue it extralaterally beneath the surface; because usually the width of the vein is so irregular and its strike and dip depart so far from right lines that it is altogether impracticable, if not impossible, to continue the logitudinal bisection at the apex throughout the vein on its dip or downward course; and because it conforms to the principle pervading the mining laws that priority of discovery and of location gives the better right, as is illustrated in the provision giving to the senior claim all ore contained in the space of intersection where two or more veins intersect or cross each other, and in the further provision giving to the senior claim the entire vein at and below the point of union where two or more veins with distinct apices and embraced in separate claims unite in their course downward. Rev. St., Sec. 2336. We recognize the force of an opinion delivered by a learned judge in this circuit wherein it was held that the right to pursue a vein downward outside of the side lines is dependent upon the inclusion within the claim the entire width of the apex, and that where two collateral locations bisect the apex neither takes any part of the vein not vertically beneath its surface (*Hall v. Equator Mining and Smelting Co.*, Transactions Am. Inst. Min. Eng., Vol. 12, p.418); but the rule which we have stated seems to us to be sustained by the better reason as well as the weight of authority. *Argentine Mining Co. v. Terrible Mining Co.*, 122 U. S. 478,

484; *Bullion, etc., Co. v. Eureka, etc., Co.*, 5 Utah 3, 49-55; *St. Louis, etc., Co. v. Montana Mining Co.*, 44 C. C. A. 120, 123, 104 Fed. 664; *Empire State, etc., Co. v. Bunker Hill, etc., Co.*, 52 C. C. A. 219, 114 Fed. 417; *Last Chance Mining Co. v. Bunker Hill, etc., Co.* .... C. C. A. ...., 131 Fed. 579; *Empire State, etc., Co. v. Bunker Hill, etc., Co.*, ... C. C. A. ...., 131 Fed. 591.

Of the claims which include portions of the longitudinally bisected apex those of the complainant, the Old Jordan and Mountain Gem, are in fact older in the order of location, and take the entire width of the vein on its dip or course downward, unless the superiority due to their seniority is avoided by some other and controlling fact. The defendants earnestly insist that their claim, the Kempton, is older in the order of patenting and, as patented, includes surface areas as to which the three claims, as located, were in conflict by reason of the overlapping of their surface boundaries; that the patenting of these areas as parts of the defendants' claim was a conclusive determination that it was prior in location, and that therefore the complainant is estopped from now claiming the fact to be otherwise. The defendants have the older patent, and we will assume that originally there were surface conflicts, as is insisted, and that the areas in conflict were patented as parts of the claim of the defendants. If the present suit related to the superior right to these surface areas or to any underground or extralateral rights necessarily following or incident to such surface ownership, the claim of estoppel would be well taken, but as the controversy is over a different subject matter and it is not shown that the question of priority of location was in fact presented and determined in the course of the patent proceedings the estoppel cannot be sustained. Some preliminary observations respecting conflicting mining claims may not be inappropriate. Seniority is determined by the order in which they were located, whether they have been patented or remain unpatented. While the area in conflict is usually awarded to the senior claim, it is not always or necessarily so, because acts or circumstances, entirely consistent with the true order of location, may

have intervened which require that this area be awarded to a junior claim. An application for a patent to one of the conflicting claims presents the question: which is the superior claim within the overlapping surface boundaries? And the inclusion of the area in conflict within a patent to one of the claims is necessarily a determination that, at the time of the patent proceedings, such area is a part of that claim. Applying these principles to the facts of the present case it is seen that the issuance of a patent for the defendants' claim, including therein the areas within the overlapping boundaries, operated as a declaration or determination that within these surface limits the defendants' claim was superior, but not necessarily that it was prior in location. Whether this determination proceeded from a failure of the then owners of the complainant's claims to file an adverse claim, or from an actual inquiry and decision respecting the right of possession (Rev. St., Secs. 2325, 2326) is not shown, so it cannot be said, and it is not insisted, that in the course of the patent proceedings there was any actual issue, trial or decision respecting the order in which the conflicting claims were located or that the patenting of the areas within the overlapping boundaries was actually rested upon priority of location. Treating the patent proceedings as involving or as equivalent to, a controversy between these parties or their predecessors in interest and title, the subject matter of that controversy was the surface conflict between their respective claims, while the present controversy is over extralateral underground rights, not necessarily following the surface conflict, which is essentially a different subject matter and could not have been made the subject of an issue, trial or decision in the course of the patent proceedings. *Montana, etc., Co. v. St. Louis, etc., Co.*, 42 C. C. A. 415, 417, 102 Fed. 430; 2 Lindley on Mines, 2nd Ed., Sec. 730. The case is thus clearly within the rule in respect of estoppel by judgment that where the subsequent action involves a different subject matter the judgment in the prior action is not conclusive as to every matter which could have been offered and received to sustain or defeat the claim made therein, but only as to matters actually

litigated and determined. The subject was exhaustively considered in *Cromwell v. County of Sac*, 94 U. S. 351, which was an action upon county bonds and interest coupons attached thereto. In a prior action upon other coupons attached to the same bonds it had been determined that the bonds were void in the hands of parties who did not acquire them before maturity for value, and inasmuch as the plaintiff had not been shown to have so acquired the bonds judgment was rendered against him. In the second action it was held that the prior judgment did not estop the plaintiff from proving that in fact he acquired the bonds before maturity for value. In the course of the opinion it was said by Mr. Justice Field:

"In considering the operation of this judgment, it should be borne in mind, as stated by counsel, that there is a difference between the effect of a judgment as a bar or estoppel against the prosecution of a second action upon the same claim or demand, and its effect as an estoppel in another action between the same parties upon a different claim or cause of action. In the former case, the judgment, if rendered upon the merits, constitutes an absolute bar to a subsequent action. It is a finality as to the claim or demand in controversy, concluding parties and those in privity with them, not only as to every matter which was offered and received to sustain or defeat the claim or demand, but as to any other admissible matter which might have been offered for that purpose.

* * * * * * * * *

"But where the second action between the same parties is upon a different claim or demand, the judgment in the prior action operates as an estoppel only as to those matters in issue or points controverted, upon the determination of which the finding or verdict was rendered. In all cases, therefore, where it is sought to apply the estoppel of a judgment rendered upon one cause of action to matters arising in a suit upon a different cause action, the inquiry must always be as to the point or question actually litigated and determined in the original action, not what might have been thus litigated and deter-

mined. Only upon such matters is the judgment conclusive in another action."

Other decisions to the same effect are *Nesbit v. Riverside Independent Dist.*, 144 U. S. 610, 618; *Roberts v. Northern Pacific R. R.*, 158 U. S. 1, 27; *Southern Pacific R. R. Co. v. United States*, 183 U. S. 519, 533; *Board of Comm'rs v. Platt*, 25 C. C. A. 87, 91, 79 Fed. 567; *Board of Comm'rs v. Sutliff*, 38 C. C. A. 167, 170, 97 Fed. 270; *Linton v. Nat'l Life Ins. Co.*, 44 C. C. A. 54, 57, 104 Fed. 584; *Aetna Life Ins. Co. v. Board of Comm'rs*, 54 C. C. A. 468, 474, 117 Fed. 82; *Last Chance Mining Co. v. Tyler Mining Co.*, 157 U. S. 683, 687. In the last case there was a controversy over extralateral underground rights between two mining claims which were in conflict as located. Priority of location became the pivotal question, and it was insisted that a determination in the course of prior patent proceedings that one of the claims was superior within the area in conflict estopped the owner of the other claim from asserting that it was prior in location. Mr. Justice Brewer in speaking for the court said:

"The particular matter in controversy in the adverse suit was the triangular piece of ground, which is not the matter of dispute in this action. The judgment in that case is therefore not conclusive in this as to matters which might have been decided, but only as to matters which were in fact decided."

The estoppel was sustained but it was because the superiority of right asserted and upheld in the court of the patent proceedings had been expressly rested upon the single fact of priority of location. The facts were these: The owner of one claim applied for a patent and the owner of the other filed an adverse claim and commenced an action to determine the right of possession to the area in conflict. Rev. St., Secs. 2325, 2326. The judgment in that action was for the plaintiff, and the reason why it was held to operate as an estoppel in the subsequent action involving a different subject matter is shown in the following extract from the opinion, which has reference to the former action:

"The single ground stated in the complaint upon

which superiority of right is claimed is priority of location. A judgment for the plaintiffs upon such a complaint is necessarily an adjudication in favor of that priority of location. There is no other fact upon which it can rest. It is doubtless true, as suggested, that other questions may be litigated in an adverse suit, but they can be litigated only when they are presented to the attention of the court by some appropriate pleading. The only pleading upon which the case passed to trial and judgment was the complaint, and in that, as we have seen, plaintiff's right to recover is rested upon the single fact of priority of location."

We think it is manifest from the extracts quoted and from the opinion as an entirety that the court recognized that superiority of right is not always or necessarily controlled by priority of location; otherwise the court would not have inquired and determined with such care whether the question of priority of location had been in fact presented and decided in the former action and would not have conceded that "other questions may be litigated in an adverse suit." As before indicated, it is not shown in the present case whether there was an adverse suit, nor if so, what questions were in fact presented and determined therein, nor upon what ground the superior right to the area in conflict was asserted and sustained in the patent proceedings. The claim of estoppel was interposed by the defendants and the burden was upon them to show the existence of every fact essential to sustain it. This they did not do.

The decree is reversed with a direction to enter a decree for the complainant in conformity to the prayer of the bill.

Filed November 23, 1904.

A true copy.

Attest:

Clerk U. S. Circuit Court of Appeals, Eighth Circuit.

UNITED STATES CIRCUIT COURT OF APPEALS, EIGHTH CIRCUIT.

I, John D. Jordan, Clerk of the United States Circuit Court of Appeals for the Eighth Circuit, do hereby certify that the foregoing nine pages contain a full, true and complete copy of the revised and corrected opinion of said United States Circuit Court of Appeals, in the case of United States Mining Company, Appellant, vs. Leonidas M. Lawson, et al., No. 1927, as full, true and complete as the original of the same remains on file and of record in my office.

IN TESTIMONY WHEREOF, I hereunto subscribe my name and affix the seal of said Circuit Court of Appeals, at office in the City of St. Louis, Missouri, in the Eighth Circuit, this twenty-fourth day of March, A. D. 1905.

(SEAL.) JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

EXHIBIT U.

General Land Office No. 2363. Mineral Certificate No. 248.

THE UNITED STATES OF AMERICA.

To All to Whom These Presents Shall Come, Greeting:

WHEREAS, In pursuance of the provisions of the Revised Statutes of the United States, Chapter Six, Title Thirty-two, there have been deposited in the General Land Office of the United States the Plat and Field Notes of survey of the Claim of Liberty E. Holden upon the Jordan Silver Mining Company's mine, accompanied by the certificate of the Register of the Land Office at Salt Lake City, in the Territory of Utah, whereby it appears that, in pursuance of the said Revised Statutes of the United States, Liberty E. Holden did, on the eighth day of June, A. D. 1877, enter and pay for said mining claim or premises, being Mineral Entry No. 248, in the series of said office, designated by the Surveyor General as Lot No. 64, embracing a portion of the unsurveyed public domain in the

West Mountain Mining District, in the county of Salt Lake and Territory of Utah, in the District of Lands, subject to sale at Salt Lake City. Containing nineteen (19) acres and ninety-nine hundredths (99-100) of an acre of land, more or less, and, according to the returns on file in the General Land Office, bounded, described, and platted as follows, with magnetic variations at Seventeen (17) degrees East, to-wit:

Beginning at a Pine Post 3x4 inches in size, marked "U. S. L." 64. "P. No. 1" set in mound of slag and stones at the Southeasterly Corner of the claim, from which United States Mineral Monument No. 1 bears South sixty-eight (68) degrees thirteen (13) minutes West, at the distance of seven hundred and seventy-one (771) feet: Thence from said Post No. 1 North twelve (12) degrees thirty (30) minutes West, one hundred (100) feet to Discovery, one hundred and twenty-four (124) feet, to the Easterly boundary of Survey made for the Red Warrior Mine, from which Post No. 6 of said Red Warrior Mine bears South fifty-three (53) degrees, thirty (30) minutes West, at the distance of six hundred and fifty feet, one hundred and forty-five (145) feet, to the Easterly boundary of Survey made for the Sturgis Mine, from which Post No. 2 of said Sturgis Mine, bears South forty-eight (48) degrees thirty (30) Minutes West, at the distance of thirty-seven (37) feet, one hundred and eighty (180) feet, to Utah Company's House, two hundred (200) feet, to a Pine Post four (4) inches square marked "U. S. L. 64." "P. No. 2" set in mound of stones at North Easterly corner of the claim; thence South seventy-seven (77) degrees thirty (30) minutes West, seventy-one (71) feet to Southerly boundary of said Sturgis Mine, from which Post No. 1 of said Sturgis Mine bears North forty-one (41) degrees thirty (30) minutes West, at the distance of eighteen (18) feet, ninety (90) feet, to a point from which discovery on said Red Warrior Mine, bears South at about ten (10) feet, one hundred and forty-two (142) feet to Westerly boundary of said Red Warrior Mine, from which Post No. 4, of said Red Warrior Mine, bears south thirty-three (33) degrees forty (40) minutes East, at the distance of

six (6) feet, one hundred and ninety (190) feet, to a point from which the Mouth of Jordan Tunnel bears South East, at the distance of twenty-two (22) feet, two hundred and eighty-six (286) feet to Gulch, three hundred and thirty-four (334) feet to Bingham Canon Rail Tramway, six hundred and twenty-eight (628) feet, to Easterly boundary of Survey of No. 39. Patented to Isador Morris, with his claim upon the Galena Mine, from which Post No. 2 of said Survey No. 39 bears South thirty-three (33) degrees thirty-nine (39) minutes West, at the distance of four hundred and fifty-two (452) feet, eight hundred and thirty-five (835) feet to Westerly boundary of said Survey No. 39, from which Post No. 5 of said Survey No. 39 bears South thirty-three (33) degrees thirty-nine (39) minutes West, at the distance of three hundred (300) feet, eleven hundred and forty-six (1146) feet to Easterly boundary of Survey made for the Neptune Mine, from which Post No. 2, of said Neptune Mine, bears South fifty-one (51) degrees fifteen (15) minutes West, at the distance of four hundred and sixty-four (464) feet, twelve hundred and eight (1208) feet to the Easterly boundary of Survey No. 55. Patented to Benjamine M. Du Rell, et al., with their claim upon the Kempton Mine, from which Post No. 4 of said Survey No. 55 bears South fifty-one (51) degrees thirty (30) minutes West, at the distance of four hundred and ninety-four (494) feet fifteen hundred and ninety-three (1593) feet, to the Westerly boundary of said Survey No. 55, from which Post No. 7 of said Survey No. 55 bears South fifty-one (51) degrees thirty (30) minutes West, at the distance of one hundred and twenty-two (122) feet, sixteen hundred and seventy (1670) feet to the Easterly boundary of Survey No. 67. Patented to George Hearst with his claim upon the Ashland Mine, from which Post No. 6 of said Survey No. 67 bears South twenty-eight (28) degrees West, at the distance of one hundred and seventy-three (173) feet, seventeen hundred (1700) feet to highest point of Ridge, eighteen hundred and thirty-eight (1838) feet to Easterly boundary of Survey No. 53. Patented to George Hardie with his claim upon the Northern Light Mine, from which Post

No. 1 of said Survey No. 53, bears south twenty-five (25) degrees West, at the distance of one hundred and twenty-two (122) feet and Ashland Discovery Monument bears South four (4) degrees twenty-four (24) minutes West, at the distance of sixty-nine (69) feet, nineteen hundred and twenty-three (1923) feet to Northerly boundary of said Survey No. 55, from which Post No. 1 of said Survey No. 55 bears North seventy-five (75) degrees thirty (30) minutes West, at the distance of eighty-seven (87) feet, nineteen hundred and thirty-six (1936) feet to the Westerly boundary of said Survey No. 67, from which Post No. 2 of said Survey No. 67 bears South thirty-six (36) degrees East, at the distance of one hundred and eighty (180) feet, nineteen hundred and eighty-eight (1988) feet to Trail Gulch, two thousand and eighteen (2018) feet to the Westerly end line of said Survey No. 55, from which Post No. 1 of said Survey No. 55 bears North fourteen (14) degrees thirty (30) minutes East, at the distance of forty-six (46) feet two thousand and forty-two (2042) feet, to Southerly boundary of said Survey No. 53, from which Post No. 2 of said Survey No. 53 bears North sixty-five (65) degrees West, at the distance of thirty-nine (39) feet, two thousand and eighty-four (2084) feet to the Easterly boundary of Survey made for the Grizzly Mine, from which Post No. 1, of said Grizzly Mine, bears South fifty-four (54) degrees West, at the distance of five hundred and sixteen (516) feet, twenty-one hundred and sixty-eight (2168) feet, to the Westerly boundary of said Neptune Mine, from which Post No. 6, of the said Neptune Mine, bears North fifty-four (54) degrees West, at the distance of thirty-nine (39) feet, twenty-three hundred and seventy (2370) feet to Top of Ridge, twenty-five hundred and ninety-two (2592) feet, to the Westerly boundary of said Grizzly Mine, from which Post No. 2, of said Grizzly Mine, bears South fifty-four (54) degrees West at the distance of forty-two (42) feet, thirty-one hundred and thirty-eight (3138) feet to Gulch, three thousand nine hundred and thirteen (3913) feet to Dump and open Cut, four thousand and thirty-eight (4038) feet to Muddy Canon and Creek, four thousand one hundred and sixty-three

(4163) feet to Trail, from which the North end of Last Chance boarding house, bears South ten (10) degrees thirty (30) minutes East, at the distance of one hundred and nine (109) feet, five thousand two hundred (5200) feet to a pine post four (4) inches square marked "U. S. L. 64," "P. No. 3" set in mound of stones at North Westerly corner of the claim, from which United States Mineral Monument No. 5 bears North forty-seven (47) degrees nineteen (19) minutes East, at the distance of one hundred and fifty-two (152) feet: Thence from said Post No. 3 South twelve (12) degrees thirty (30) minutes East, two hundred (200) feet to a pine Post four (4) inches square, marked "U. S. L. 64, P. No. 4," set in mound of stones at South Westerly corner of the claim. Thence North seventy-seven (77) degrees thirty (30) minutes, East ten hundred and thirty (1030) feet to Muddy Canon and Creek, twenty-six hundred and forty-nine (2649) feet to corner common to said Grizzly and Neptune Mines, three thousand and thirty-four (3034) feet to the Westerly boundary of Survey No. 69, patented to Isador Morris with his claim upon the Ashland No. 2 Mine from which Post No. 1 of said Survey No. 69 bears North thirty-six (36) degrees East at the distance of one hundred and twenty-two (122) feet, three thousand one hundred and ninety-eight (3198) feet to Southerly boundary of said Survey No. 67, from which Post No. 1 of said Survey No. 67, bears South fifty-four (54) degrees East, at the distance of ninety-five (95) feet, three thousand two hundred and seventy-five (3275) feet to the Southerly boundary of said Survey No. 55, from which Post No. 3, of said Survey No. 55 bears South seventy-five (75) degrees thirty (30) minutes East, at the distance of eighty-three (83) feet three thousand three hundred and thirty-five (3335) feet to Easterly boundary of said Survey No. 67, from which Post No. 1, of said Survey No. 67, bears South thirty-six (36) degrees West, at the distance of one hundred and two (102) feet, three thousand five hundred and seventy-five (3575) feet to the Easterly boundary of said Survey No. 55, from which Post No. 4, of said Survey No. 55, bears South fifty-one (51) degrees thirty (30) minutes

West, at the distance of thirty-eight (38) feet, three thousand six hundred and fifty-eight (3658) feet to the Easterly boundary of said Neptune Mine, from which Post No. 2 of said Neptune Mine, bears South fifty-one (51) degrees fifteen (15) minutes West, at the distance of twelve (12) feet, four thousand one hundred and fifty-three (4153) feet to the Westerly boundary of said Survey No. 39, from which Post No. 5 of said Survey No. 39 bears South thirty-three (33) degrees thirty-nine (39) minutes West, at the distance of eleven (11) feet four thousand three hundred and sixty (4360) feet to the Easterly boundary of said Survey No. 39, from which Post No. 2 of said Survey No. 39, bears South thirty-three (33) degrees thirty-nine (39) minutes West, at the distance of one hundred and sixty-three (163) feet, four thousand four hundred and five (4405) feet to a point, from which Old Shaft, bears South twelve (12) degrees thirty (30) minutes East, at the distance of about forty (40) feet, four thousand six hundred and twelve (4612) feet to the Northwesterly boundary of said Red Warrior Mine, from which Post No. 5 of said Red Warrior Mine bears South fifty-three (53) degrees, thirty (30) minutes West, at the distance of sixty-three (63) feet, four thousand six hundred and fifty-two (4652) feet to Bingham Canon Rail Tramway, four thousand eight hundred and seventy-seven (4877) feet to a point from which Jordan Tunnel No. 1 bears North sixty-four (64) degrees West, four thousand nine hundred and twelve (4912) feet, to the Southerly boundary of said Red Warrior Mine, from which Post No. 6, of said Red Warrior Mine, bears South fifty-three (53) degrees thirty (30) minutes West at the distance of three hundred and thirty-seven (337) feet, four thousand nine hundred and thirty (4930) feet, to a point from which Bar and Childs' Saloon, on North side of Bingham road, bears North of the distance of about five (5) feet, four thousand nine hundred and seventy (4970) feet to a point from which George Jackson's Hotel, bears North, at the distance of about fifteen (15) feet, five thousand (5000) feet to a point from which the Jordan Silver Mining Company's Office, bears North, at the distance of about twenty-

five (25) feet, five thousand one hundred (5100) feet, to a point from which Morris' Store bears North at the distance of about twenty (20) feet, five thousand two hundred (5200) feet to the place of beginning.

Containing nineteen (19) acres and ninety-nine hundredths (99-100) of an acre of land, more or less, and embracing fifty-two hundred (5200) linear feet Westerly from Discovery on said Jordan Silver Mining Company's Mine.

It being the express intent and meaning of these presents to convey to the grantee herein fifty-two hundred (5200) linear feet of the said Jordan Silver Mining Company's Mine, together with the surface ground hereinbefore described which is not embraced by said Surveys Nos. 39, 53, 55, 67, and 69, as represented by yellow shading in the following plat:

Second: That the premises hereby conveyed, with the exception of the surface, may be entered by the proprietor of any other vein, lode, ledge or deposit, the top or apex of which lies outside the exterior limits of said survey, should the same in its downward course be found to penetrate, intersect, extend into, or underlie the premises hereby granted, for the purpose of extracting and removing the ore from such other vein, lode, ledge, or deposit.

Third: That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts.

Fourth: That in the absence of necessary legislation by Congress, the Legislature of Utah, may provide rules for working the mining claim or premises hereby granted, involving easements, drainage and other necessary means to its complete development.

In Testimony Whereof, I, Rutherford B. Hayes, President of the United States of America, have caused these letters to be made patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the fourteenth day of July, in the year of our Lord one thousand eight hundred and seventy-seven and of the Independence of the United States the one hundred and second.

By the President:

(SEAL.) R. B. HAYES.

By B. L. LANG, Secretary.

S. W. CLARK,
Recorder of the General Land Office.

Recorded Vol. 28, pages 297 to 308, inclusive.
Examined.
Recorded June 16th, 1880, at 11:40 a. m.

Now Know Ye, That the United States of America, in consideration of the premises, and in conformity with the said Revised Statutes of the United States, have given and granted and by these presents do give and grant, unto the said Liberty E. Holden and to his heirs and assigns, the said mining premises hereinbefore described as Lot No. 64, embracing a portion of the unsurveyed Public Domain with the exclusive right of possession and enjoyment of all the land included within the exterior lines of said survey not herein expressly excepted from these presents, and of fifty-two hundred (5200) linear feet of the said Jordan Silver Mining Company's Mine, vein, lode, ledge, or deposit for the length hereinbefore described throughout its entire depth, although it may enter the land adjoining and also of all other veins, lodes, ledges, or deposits throughout their entire depth, the tops or apexes of which lie inside the exterior lines of said survey at the surface extended downward vertically, although such veins, lodes, ledges, or deposits in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said survey; Provided, that the right of possession hereby granted to such outside parts of said veins, lodes, ledges, or deposits shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said Survey at the surface, so continued in their own direction that such vertical planes will intersect such exterior parts of said veins, lodes, ledges, or deposits; and Provided

further, that nothing in this conveyance shall authorize the grantee herein, his heirs, or assigns, to enter upon the surface of a mining claim owned or possessed by another: To Have and to Hold said mining premises, together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereunto belonging, unto the said Liberty E. Holden and to his heirs and assigns forever, subject, nevertheless, to the following conditions and stipulations:

First: That the grant hereby made is restricted to the land hereinbefore described as Lot No. 64 with fifty-two hundred (5200) linear feet of the Jordan Silver Mining Company's Mine, vein, lode, ledge or deposit for the length aforesaid throughout its entire depth as aforesaid, together with all other veins, lodes, ledges, or deposits throughout their entire depths as aforesaid, the tops or apexes of which lie inside the exterior lines of said Survey.

CERTIFICATE.

STATE OF UTAH, }
COUNTY OF SALT LAKE. } ss.

I, P. O. Perkins, County Recorder in and for said County, do hereby certify that the annexed instrument of writing, comprising eight sheets, is a full, true and correct copy of that certain UNITED STATES PATENT, made and executed by The United States of America, to Liberty E. Holden, as the same appears of record in my office in Book "K" of Mng. Dds., of the records of said County, at pages 534 to 540.

WITNESS my hand and Official Seal, at Salt Lake City, (SEAL.) Utah, this eleventh (11th) day of January, A. D. 1905.

P. O. PERKINS,
Recorder, Salt Lake County, Utah.

By ....., Deputy.

EXHIBIT "Y."

DEPARTMENT OF THE INTERIOR,

General Land Office.

WASHINGTON, D. C., January 20, 1905.

I hereby certify that the annexed copy of patent is a true and literal exemplification from the record in this office.

In testimony whereof I have hereunto subscribed my name, and caused the Seal of this office to be affixed, at the city of Washington, on the day and year above written.

[SEAL.]

C. H. BRUSH,
Recorder of the General Land Office.

GENERAL LAND OFFICE.
NO. 29681.

MINERAL CERTIFICATE.
NO. 2340.

THE UNITED STATES OF AMERICA,

To all to whom these Presents shall come, Greeting:

Whereas, In pursuance of the provisions of the Revised Statutes of the United States, Chapter Six, Title Thirty-two, and legislation supplemental thereto, there have been deposited in the General Land Office of the United States the Plat and Field Notes of survey and the Certificate, No. 2340, of the Register of the Land Office at Salt Lake City, in the State of Utah, accompanied by other evidence whereby it appears that the Old Jordan and Galena Mining Company did, on the thirty-first day of December, A. D. 1897, duly enter and pay for that certain mining claim or premises, known as the Mountain Gem Lode Mining claim designated by the Surveyor General as Lot No. 475, Survey No. 439, embracing a portion of the unsurveyed public domain, in the West Mountain Mining District, in the County of Salt Lake, and State of Utah, in the District of Lands subject to sale at Salt Lake City and bounded, described, and platted as follows, with magnetic variation sixteen degrees and forty minutes east.

Beginning at corner No. 1, a pine post four inches square marked U. S. L. 475 P. 1, in mound of stone. Thence, first course, north twenty-five degrees and thirty-seven minutes west fourteen and six-tenths feet intersect the northerly side line of the Excelsior lode claim, Lot No. 366, at north fifty-seven degrees and thirty-six minutes east sixty-five and sixty-six hundredths feet from post No. 6 of said claim; one hundred feet to a point from which discovery bears north sixty-four degrees and twenty-three minutes east eighty-eight feet distant; one hundred and forty-one and ninety-eight hundredths feet intersect the southerly side line of the Kempton lode claim Lot No. 55, at north seventy-five degrees and thirty minutes west fifty-two and fifty-six hundredths feet from post No. 3 of said claim; two hundred feet to post No. 2. Thence, second course, north sixty-four degrees and twenty-three minutes east forty-one and nineteen hundredths feet intersect south side line of the Jordan lode claim, Lot No. 64; four hundred and seventy and thirty-five hundredths feet to post No. 3, a pine post four inches square marked U. S. L. 475, P. 3, in mound of stones, from which the mouth of Jackson incline bears north eighty-two degrees east seventy feet distant and U. S. mineral monument No. 1 bears south eighty-three degrees and forty-four minutes east seven hundred and fourteen feet distant. Thence, third course, south twenty-five degrees and thirty-seven minutes east sixty-one and eighty-eight hundredths feet intersect the southerly side line of said lot No. 55 at north fifty-one degrees and thirty minutes east two hundred and forty-two and eighty-one hundredths feet from post No. 4 of said claim; one hundred feet intersect the south side line of said lot No. 64; also intersect the northerly side line of said lot No. 366 at south forty-five degrees and forty-seven minutes west two hundred and eighty-eight and forty-two hundredths feet from post No. 8 of said claim; two hundred feet to post No. 4, a pine post four inches square marked U. S. L. 475 in mound of stones, from which U. S. mineral monument No. 1 bears north eighty degrees and forty minutes east six hundred and thirty-one and fifty-nine hundredths feet distant. Thence,

fourth course, south sixty-four degrees and twenty-three minutes west four hundred and seventy and thirty-five hundredths feet to corner No. 1, the place of beginning. Expressly excepting and excluding from these presents all that portion of the ground hereinbefore described embraced in said mining claims or lots Nos. 55, 64, and 366, and also all that portion of said Mountain Gem vein or lode and of all veins, lodes and ledges throughout their entire depth the tops or apexes of which lie inside of such excluded ground; said Lot No. 475 extending four hundred and seventy and thirty-five hundredths feet in length along said Mountain Gem vein or lode; the granted premises in said lot containing sixty-hundreds of an acre of land, more or less.

Now Know Ye, That there is therefore granted by the United States unto the said Old Jordan and Galena Mining Company and to its successors and assigns, the said mining premises hereinbefore described, and not expressly excepted from these presents, and all that portion of the said Mountain Gem vein, lode, or ledge, and of all other veins, lodes, and ledges, throughout their entire depth, the tops or apexes of which lie inside of the surface boundary lines of said granted premises in said Lot No. 475 extended downward vertically, although such veins, lodes, or ledges in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said premises: *Provided*, That the right of possession to such outside parts of said veins, lodes, or ledges, shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said Lot No. 475, so continued in their own direction that such planes will intersect such exterior parts of said veins, lodes, or ledges: *And provided further*, That nothing herein contained shall authorize the grantee herein to enter upon the surface of a claim owned or possessed by another.

TO HAVE AND TO HOLD said mining premises, together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereunto belonging unto the said grantee above named and to its successors

and assigns forever; subject nevertheless to the above-mentioned and to the following conditions and stipulations:

First. That the premises hereby granted, with the exception of the surface, may be entered by the proprietor of any other vein, lode, or ledge, the top or apex of which lies outside of the boundary of said granted premises, should the same in its dip be found to penetrate, intersect, or extend into said premises, for the purpose of extracting and removing the ore from such other vein, lode, or ledge.

Second. That the premises hereby granted shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of the courts. And there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States.

Third. That in the absence of necessary legislation by Congress, the Legislature of Utah may provide rules for working the mining claim or premises hereby granted, involving easements, drainage, and other necessary means to its complete development.

In testimony whereof, I, William McKinley, President of the United States of America, have caused these letters to be made patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand at the City of Washington the eighteenth day of July, in the year of our Lord one thousand eight hundred and ninety-eight, and of the Independence of the United States the one hundred and twenty-third.

By the President:

WILLIAM McKINLEY.

By F. M. McKEAN, Secretary.

[SEAL.]

C. H. BRUSH,

Recorder of the General Land Office.

Recorded Vol. Mineral, pages 189 to 192, inclusive.